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Infantry Training

Volume III

RANGES AND COURSES

PAMPHLET No. 31

RANGES

(ALL ARMS)

1958

PART I—ANNUAL RANGE COURSES

PART II—RANGE WORK—GENERAL

This pamphlet supersedes Infantry Training, Volume III, Ranges and Courses, Pamphlet No. 31, Range Work—General (All Arms) 1948 (WO Code No. 8399) and Pamphlet No. 32, Annual Range Courses (All Arms), 1952 (WO Code No. 8758).

By Command of the Army Council,

E. W. Playfair

THE WAR OFFICE,
5th March 1958.

AMENDMENTS

[illegible]

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ABBREVIATIONS

MOBAT	MODIFIED BN	A/TK GUN.
BAT	Battalion Anti-Tank gun	
FUP	Forming up place	
HESH	High explosive squash head	
MPI	Mean point of impact	
QR ...	Queens Regulations	
QE ...	Quadrant elevation	
SL ...	Self loading	
SMG	Sub-machine gun	
WO	War office	
WCGP	Waterproof covering general purpose	
DL	DETACHMENT	COMMANDER.

RESTRICTED

INFANTRY TRAINING
VOLUME III
RANGES AND COURSES

PAMPHLET No. 31

RANGES

(ALL ARMS)

1957

PART I—ANNUAL RANGE COURSES

PART II—RANGE WORK—GENERAL

INTRODUCTION

Part I contains the general instructions necessary for firing the following weapons, and, where applicable, the annual range courses:—

The rifle;

LMG;

MMG;

section, platoon and battalion anti-tank weapons;

pistol;

SMG;

light and medium mortars;

hand and rifle HE and smoke grenades.

The appendixes at the end of the pamphlet contain the details of the courses to be fired and the ammunition allotment.

Details of training ammunition available are published in Common User Scales.

Part II is intended to give guidance to all who are concerned with the conduct and supervision of firing with live ammunition. It covers the procedure to be adopted on all types of ranges and deals with the safety rules which must be enforced including the disposal of blinds.

PART I
ANNUAL RANGE COURSES
CHAPTER 1
GENERAL INSTRUCTIONS

SECTION 1—AMMUNITION AND WEAPONS

1. The courses laid down in the appendixes to this pamphlet are those considered best suited for training purposes.
2. In certain cases financial or other restrictions may reduce the scales of ammunition as published annually.
3. These scales must be adhered to, and the course modified accordingly. If detailed modification is necessary, a special War Office instruction will be issued.
4. The authorized scale of weapons varies from time to time in different arms. The details of courses shown in this pamphlet will only be altered as required on the authority of the War Office.

SECTION 2—ZEROING

5. The zeroing of all weapons is an essential preliminary to the firing of range courses. The standard of shooting in a unit will be in direct proportion to the time and detailed care taken in zeroing weapons.
6. Instructions for zeroing weapons will be found in the appropriate pamphlet of the weapon concerned.

SECTION 3—COACHING

7. The young soldier is entitled to, and must receive, efficient coaching. All units will have a cadre of trained and experienced coaches whose job is not only to coach the men but to train all NCOs in the art of coaching.
8. Notes on coaching with the rifle and LMG will be found in the rifle and LMG pamphlets. The principles, so far as they affect the relationship between coach and pupil, apply equally to other weapons.
9. Coaching by experienced firing point instructors is essential throughout instructional practices but will not be allowed for classification practices, except for first year men.

Amdt/6 Apr/1962

10A. The noise of discharge of modern weapons can cause little soft yellow vaseline. The cotton wool plug should block the entrance to the ear passage, small enough to remain in this position, and should not be put in too forcibly but stay in position until taken out by the wearer. A little pressure correct fitting. Rubber ear plugs will not be used for they are easily lost or soiled and are most unsuitable for

10B. The ideal protection is a piece of clean cotton wool little soft yellow vaseline. The cotton wool plug should block the entrance to the ear passage, small enough to remain in this position, and should not be put in too forcibly but stay in position until taken out by the wearer. A little pressure correct fitting. Rubber ear plugs will not be used for they are easily lost or soiled and are most unsuitable for

Interpretation of terms

11. The following is the interpretation of terms used in the detail of range practices:—

- (a) *Lying in the open.* No support of any kind is allowed for the weapon, forearm or wrist.
- (b) *Wrist or forearm rested.* Wrist and forearm supported against the cover. The rest (usually sandbags) may be adjusted to suit the firer.
- (c) *Over or round cover.* The cover must be used as taught, and no adjustment to suit the firer is permitted.
- (d) *Firing in a fire trench.* The trench must have a properly constructed elbow rest. Both elbows or forearm will be rested. A fire step made of ammunition boxes or cut as part of the trench, should be provided to allow short men to get a comfortable position.

SECTION 5—REPETITION AND EXEMPTIONS

Repetitions

12. Firers who do badly in instructional practices may repeat the practice or practices concerned, or the whole part, at the discretion of commanding officers.

13. The following rule will apply to repetition of classification practices:— All classification practices and not just selected practices will be repeated but not within three months of the last classification except in the case of recruits. The reason for this is to ensure that failures receive proper training before being re-classified.

14. Ammunition for repetition shooting will come from the CO's pool.

Exemptions

15. Total or partial exemptions from annual range courses will be as laid down by command or theatre HQ.

16. As a guide these should not exceed 20 per major unit. No one armed with a rifle or SMG should be exempted from firing the rifle or SMG course.

SECTION 6—ALLOWANCES FOR JAMS AND STOPPAGES

17. In instructional practices re-shoots may be allowed at the discretion of the firing point officer. In classification practices re-shoots will not normally be allowed. Firing point officers may only permit re-shoots in classification practices when they are fully satisfied that a jam or stoppage has interrupted the firer and such interruption was without any doubt outside the firer's control.

18. Firing point officers should be influenced by the following:—

- (a) With a bolt actioned rifle a jam is normally the firer's fault.
- (b) With weapons such as MMGs, SMGs, self-loading rifles and LMGs, badly filled or faulty magazines or belts, lack of gas, hard extraction due to a dirty chamber and other stoppages, are not normally adequate reasons for a re-shoot in a classification practice.
- (c) A fresh round should always be allowed for a misfire.
- (d) A re-shoot should always be allowed for a mechanical breakdown.

19. If a firer shoots on the wrong target the firers involved will re-shoot the practice unless the scores can be fairly assessed.

20. Team weapons such as MMGs and LMGs must be cleaned after every few details. The number of details will depend upon the weather conditions and the type of firing.

SECTION 7—SUPERVISION

21. Classification practices will be supervised by qualified officers detailed by the commanding officer of the unit concerned (*see* section 19). Officers will be in the butts and on the firing point; they may be assisted by warrant officers. At no time during classification will any one officer in the butts supervise more than eight targets.

22. For range duties *see* Chapter 2.

23. For safety rules and conduct of practices *see* Chapters 4 and 5.

SECTION 8—TARGETS AND AMMUNITION

24. Details of targets used are shown in Infantry Training Volume III, Pamphlet No. 32 (WO Code No. 9486).

25. Ammunition allotment is shown in the details of courses (*see* appendixes A to G.)

26. CO's pool provides extra ammunition for such purposes as:—
zeroing;
preliminary shoots;
gas practices;
repetitions;
quick battle shooting at moving and fleeting targets;

INDIVIDUAL NIGHT FIGHTING

SECTION 9—TRAINING FOR ANNUAL RANGE COURSES

27. It is a waste of time and ammunition if a range course is fired, with any weapon, without proper training and preparation, and it is unfair to troops whose rates of pay may depend upon the result.

28. Such training should take the form of rehearsing the courses to be fired, so that men go on the range knowing:—

- (a) the conditions of the practice to be fired,
- (b) the scoring,
- (c) the sighting of the weapon they are to fire,

and are in a condition both physically and mentally to gain the greatest value from the time, money and ammunition expended.

29. Preparatory training is of the greatest value if it is started as early as possible. (Six weeks at one hour a day is not too long as preparation for the rifle courses.) Training is preferable in small doses rather than in intensive concentrated periods.

30. To start training just before the course is due to be fired is worse than not training at all because eyes and muscles become tired and strained by intensive practice.

31. As much firing as possible should be done during the preparatory period.

CHAPTER 2

RANGE DUTIES—CLASSIFICATION RANGES

SECTION 10—PREPARATORY ARRANGEMENTS

32. It is important that the greatest value be obtained from existing classification ranges. This can be obtained by:—

- (a) Using the range during all available hours of daylight, eg, the first shot should be fired when it is light enough to see and the last one just before dusk. There is no place for the eight hour day with a limited number of ranges.
- (b) Making careful preparatory arrangements.

33. Before a range is used a reconnaissance must be made to find out:—

- (a) The contents of the range orders, which may be obtained from the range warden.
- (b) The number and type of target frames available.
- (c) The number and type of targets available, and their condition.
- (d) Whether all the other necessary appliances are available.
- (e) Whether the range telephones are in working order or if some alternative means of contact between butts and firing point will have to be provided, eg, wireless, bugle or periscope, etc.
- (f) Details of range standing orders.
- (g) Any temporary orders regarding look-outs or any limitations on firing, which may not have been inserted in the standing orders.
- (h) Whether latrines, water, etc, are available and whether there is provision for heating water for cooking purposes.
- (j) What the weather conditions are likely to be, including the direction of the prevailing wind, the direction of the sun, etc.

34. Administrative matters which must also be considered are:—

- (a) *Ammunition.* This must be drawn, and an ammunition party detailed. This party must be large enough to allow reliefs for firing. Sandbags should be provided for the collection of empty cases and for use as cover where permitted.
- (b) *Telephone.* One or more telephone orderlies should be detailed. It is best to employ unit signallers if they can be made available. The telephone operator at the firing point may work the firing point red flag on orders from the firing point.
- (c) *Coaches.* These should be chosen from those officers, WOs and NCOs who have had special training in this subject. They should be briefed for each day's firing.
- (d) *Butt party.* Full details of butt duties will be found in sections 11 and 12.
- (e) *Transport.* An early requisition for transport should be sent to the proper authority.
- (f) *Feeding.* Arrangements for feeding must be considered, and early warning given to the cooks.
- (g) *Weather.* The question of cover for use in bad weather must be considered. Extra ground sheets for use on the firing point will also be needed in those circumstances.
- (h) *Miscellaneous.* A supply of flannelette, oil, fuel, sandbags, etc, must be taken. The firing point officer should always have a watch, field glasses and a whistle. The butt officer will need a whistle and a stop watch.

SECTION 11—PRELIMINARY ARRANGEMENTS IN THE BUTTS

35. The success of the day's firing and the progress of men under instruction on the firing point will depend, in no small measure, on good butt marking. Good butt marking implies:—

- (a) Strict supervision.
- (b) Skill in signalling and manipulation of targets.
- (c) Conscientiousness and honesty.
- (d) Rehearsal of markers.

An officer will always be in charge of the butts during classification. Warrant officers or NCOs, not below the rank of sergeant, may be in charge at any other time.

36. The officer, warrant officer or NCO in charge should have a pen, pencil, rule, whistle, stop watch and butt registers (A.F.B. 190) which must be properly made out for all practices to be fired during the day.

37. Contact should be made with the range warden at least 48 hours before the shooting is due to start, to ensure that the necessary targets are available.

38. The butt party should arrive in plenty of time to see that the targets and all necessary equipment are ready.

39. When the butt party arrives in the butts:—

- (a) Relevant safety rules are read out to the markers (*see* section 12).
- (b) Two men are detailed to each target frame.
- (c) Targets are erected and the necessary equipment for the markers prepared. Old shot holes will be patched up and the target frames tested for smooth working. All front targets in use should have an easily distinguishable black cross on their top right-hand corner.
- (d) The telephones or RT, if used, should be tested.
- (e) The markers should be rehearsed.

40. Scoring rings on the targets should be checked for clearness and correct dimensions. For grouping practices, a white patch, size four and a half by three inches, will be placed at the centre of the aiming mark with its longer side vertical. The bottom edge of such patches will be on the centre of the bottom edge at the aiming mark.

If sniper rifles, fitted with telescopic sights, are in use, white patches, size one inch square, will be used.

SECTION 12—BUTT DUTIES DURING AND AFTER FIRING

The red flag in the butts

41. The red flag in the butts will be lowered on the order of the butt officer only when he is sure that everyone is under cover in the markers gallery. The lowering of this flag is the signal to the firing point that the butt party is ready for the firing to start; the order to lower it must be given so that everyone in the butts can hear it.

42. The red flag must *never* be hoisted in the butts without permission from the firing point, or on an order from the firing point, and then not before ensuring that the firing point red flag is already up.

43. No one is allowed outside the markers gallery when the red flag in the butts is down and no one will ever leave the gallery without the permission of the officer, warrant officer or NCO in charge.

Butt duties

44. One marker will watch the bank behind the target to note the strike of the shots and assist in determining the direction of any misses; the other man will watch the target.

In grouping practices, the order of the arrival of the shots must be noted and written down.

45. In practices other than grouping, snap or timed, shots will be correctly signalled. The method of signalling and scoring will be found in the range course concerned.

46. Targets will only be lowered on the command "Check" or "Down", or on a pre-arranged whistle signal. When targets have been lowered, the markers will, in all cases, stand right away from their targets and will not touch them until the supervising officer has recorded the scores and given the order "Patch up".

47. At the end of a timed practice, the targets will be brought to the half-mast position to prevent additional shots appearing on a clean target.

48. Snapshooting targets must be put up at a uniform height, for the correct time, and in about the same place each time, unless the conditions of the practice state otherwise. Snapshooting and timed practices will be timed by stop watch from the time the targets are fully exposed.

49. Snapshooting targets will be put straight up and down and not swung up from a flank; care should be taken not to scrape off previous patches on the mantlet as the targets are put up.

The end of a practice

50. Targets will be checked and the value of all shots recorded in ink on the butt register. If a mistake is made, the figure will be crossed out with a single thin line, the new figure written beside it and the correction initialled by the supervising officer.

51. If more hits are found on the target than should have been fired by one individual, the firing point will be so informed (*see para 19*).

52. As targets are checked and scores recorded, shot holes on the target will be marked off with a pencil and patched up; the pencil marking will prevent a shot being counted twice should a patch come off at any time.

End of all firing

53. When all firing is finished, the targets, having been patched up correctly, will be put away, together with all other equipment. Two men will always be used to carry one four-foot or one six-foot target to prevent damage.

54. The entire butt area will be cleaned up.

55. The supervising officer will add up all the scores and cross check them, finally signing the butt registers before handing them in.

SECTION 13—SIGNALLING

56. Full details of scores which can be obtained by an individual in any practice will be found clearly laid down under the conditions of the range courses in force. Below will be found details of the method of signalling shots from the butts to the firing point as they arrive, or, in timed practices, at the end of the practice.

57. The code of signals to be used is as follows:—

- (a) *Bulls eye*. White side of triangle exposed on left side of target, then the point of the white triangle is placed on the shot hole.
- (b) *Inner*. Black side of the triangle exposed on the left side of target, then waved twice across the target; the point of the triangle is then placed on the shot hole.
- (c) *Magpie*. Black side of triangle exposed on left side of target and revolved twice; the point of the triangle is then placed on the shot hole.
- (d) *Outer*. Black side of triangle exposed on left side of target, moved vertically twice up and down; the point of the triangle is then placed on the shot hole.
- (e) *Miss*. Red and white flag shown on the side of the target to which bullet went: if the miss is on the non-scoring surface of the target, the flag is draped over the appropriate corner. If the miss is unobserved the flag is waved twice only across the target.
- (f) *Ricochet*. Flag placed at the bottom of the target.

Grouping practices

58. Only in the unlikely event of the firers not being able to go up to the butts personally to inspect their groups will the following signals be necessary:—

- (a) *4-inch group*. Signalled as for bull and point of triangle placed on the MPI.
- (b) *8-inch group*. Signalled as for inner and point of the triangle placed on the MPI.
- (c) *12-inch group*. Signalled as for magpie, and point of the triangle placed on the MPI.
- (d) *12-inch and 1 wide*. Signalled as for outer and point of the triangle placed first on centre of the four shots, and then on the wide shot.
- (e) *No group*. Signalled as for miss.

Snapshooting practices

59. Immediately the targets have been brought down after each exposure, the supervising officer in the butts will order "Signal shots" when this is allowed. Those targets which have been hit will then be raised above the mantlet, twisted round quickly and brought down ready for the next exposure.

Timed practices

60. There is no signalling during timed practices but scores will be signalled at the end of the practice or sent back over the telephone.

61. Scores will be signalled by showing a white disc for each ten points obtained, and a black disc for each single point, eg, in a practice in which a firer obtains a score of 15, the markers would show a white disc once and a black disc five times. The MPI of the shoot will then be shown.

The value of shots

62. Shots cutting the edge of any ring, rectangle, or figure, will be counted to the benefit of the firer. Shots on those portions of the target outside the outer circle, where such shots do not cut the circle, will not count for score.

Spotting discs

63. In advanced shooting, and especially in competitions and practice for the Army Rifle Association (ARA) competitions, "spotting discs" will be required.

A spotting disc is a white or black metal square, mounted at its centre on a piece of stiff wire; the wire is passed through the shot hole, a white spotting disc being displayed on a black surface and a black disc on other coloured surfaces.

The use of these spotting discs is invaluable for showing groups after a rapid or snapshooting practice, when one disc must be placed in every shot hole. They are also most useful for indicating the MPI in LMG practices.

SECTION 14—RANGE TELEPHONE SIGNALS

64. Unnecessary talk on range telephones wastes much valuable time. The following telephone bell signals will, therefore, be used:—

<i>From</i>	<i>To</i>	<i>Rings</i>	<i>Reason</i>
Firing Point	Butts	2 short	Check targets.
Firing Point	Butts	1 short	Firing point is ready for exposure of targets.
Firing Point	Butts	1 long	I want to talk to you.
Butts	Firing Point	1 short	Butts are ready for exposure of targets.
Butts	Firing Point	1 long	I want to talk to you.

65. In timed practices the butts will give the firing point a short ring when they are ready. The targets must be exposed immediately the firing point returns the short ring to the butts, indicating that all is ready on the firing point.

CHAPTER 3

RIFLE MEETINGS—RECORDS AND RETURNS

SECTION 15—GENERAL CONSIDERATIONS

66. The competitive element is an incentive to weapon training efficiency, provided that it is not carried to excess. Competitions at weapon training meetings should be so framed that they lead to efficiency in battle shooting and attract the largest possible number of entrants. Team competitions are preferable to individual events, as they are a better means of attaining a good average standard.

67. If there is no time or ranges are not available, competitions can be based on the annual range courses.

68. Competitors should be divided into classes according to their rank, experience and ability. Two convenient systems of division are as follows:—

- (a) officers and senior NCOs',
- (b) sergeants and corporals,
- (c) soldiers, including lance-corporals,
- or
- (d) 1st and 2nd class shots,
- (e) recruits.

69. Team competitions should be based on the war organization of units and the "packing" of teams should be prevented as far as possible.

70. Programmes should embrace both service and sniper rifles, machine guns, pistols and sub machine guns.

Prizes should be many and small, rather than few and large.

71. Rifle meetings, if well organized and held in fine weather, can be of great value in stimulating interest in rifle and other weapon shooting. They must be organized with considerable care if they are to be of real value. Some advice is given in section 16 about the main points to be considered to ensure a successful meeting.

72. As much warning as possible should be given of the date and place of the meeting and the conditions of the competition, to allow opportunity for preliminary practice.

SECTION 16—ORGANIZATION OF A RIFLE MEETING

73. A committee should be appointed, with responsibility to ensure that the following arrangements are made:—

- (a) Superintending officers and NCOs for firing points and butts are detailed and briefed in their duties.
- (b) Register keepers are nominated and arrangements made for keeping statistics. A tent is invaluable on the ranges if no shed is available; proper records cannot be kept in the open if the weather is wet and windy.

- (c) Markers are detailed and rehearsed.
- (d) "Whippers in" are provided to help control the firers and answer questions.

74. Points affecting ranges, which must be borne in mind when organizing a meeting, are:—

- (a) The type and number of targets available.
- (b) Considerations which affect fire and movement practices.
- (c) Safety precautions and other local range rules, which must be obeyed.

75. In arranging the actual practices:—

- (a) Consider the exact nature of each competition and what weapons are to be catered for.
- (b) Work out a careful time programme.
- (c) Provide squadding tickets to show the firer the times he will be expected to be ready on the firing point.
- (d) Consider if there should be a special competition for visiting teams.

76. There may be spectators who do not intend to take part in the whole meeting. Their interest may be rewarded by providing certain sideshows where they can have some added amusement. Possibilities are:—

- (a) "Pool bull".—This should be going from early on in the meeting; the really keen competitor will go there to sight his rifle for the prevailing conditions of light and wind.
- (b) Sniper rifle sideshows which are a particularly good "draw". "Floating bull", "Aunt Sally", and dartboard competitions also provide much amusement.

77. The Army Rifle Association Handbook will be found useful when framing the rules of a rifle meeting. An answer for almost every contingency is given in this book, which should be carefully studied. Competitors should be notified beforehand that the meeting will be held under Army Rifle Association conditions.

78. Points to bear in mind in considering prizes are:—

- (a) There will probably have to be entrance fees for the various competitions, if reasonable prizes are to be given.
- (b) Sweepstakes are usually a popular feature.
- (c) Sideshow prizes will be available from the money taken for these competitions.
- (d) It is often worth while having a grand aggregate prize for the meeting.
- (e) Prizes should preferably be in "kind" rather than in cash.

79. Many administrative points will have to be thought out. Some of these are given below:—

- (a) Ammunition.
- (b) Food and cooking.
- (c) Water.
- (d) Tentage.
- (e) Transport for stores and competitors.
- (f) Car parking.
- (g) Latrines.
- (h) Public address equipment.
- (j) Extra telephones.
- (k) Careful timing of events, suitable intervals, etc.

SECTION 17—RECORDS AND RETURNS

80. The following is a list of weapon training returns, records, registers, etc. Full particulars and directions for compiling them are contained on each form.

Regular Army

- AF B 187A Regimental Weapon Training Return (Ammunition Account)
- AF B 189 Firing Point Register for Range Practices.
- AF B 190 Butt Register for Rifle, Machine Carbine, Pistol and Light Machine Gun Practices.
- AF B 2763 Infantry Unit Ammunition State.
- AF B 159 Certificate of Examination of Pouches etc., when Blank or Drill ammunition is issued on Parade—see QR para 1047.
- 81-90. Reserved.

PART II

RANGE WORK—GENERAL

CHAPTER 4

CONDUCTING OFFICERS, ACTION IN ACCIDENTS, RECORDING AND REPORTING FAILURES AND DEFECTS IN AMMUNITION ETC.

SECTION 18—GENERAL

91. This part deals with the safety rules to be observed when firing with live ammunition on all ranges and, where applicable, the conduct of practices.

92. Full details of danger areas, construction, targets and apparatus of all ranges are given in Infantry Training Volume III, Ranges and Courses Pamphlet No. 32 Range Construction and Regulations (All Arms) 1957 (WO Code No. 9486)

93. All firing with live ammunition must be supervised by a officer or a SASC Warrant Officer except that:—

- (a) A qualified warrant officer may supervise practice rifles, LMGs, MMGs and SMGs.
- (b) A qualified NCO not below the rank of sergeant firing of all weapons which may be fired on two and small bore (miniature) ranges, except pistols.

94. A qualified officer, warrant officer or NCO is deemed to be one who has qualified by obtaining a "C" grading or better at the School of Infantry on a course which included instruction in the use of the weapon and the range work involved.

95. Those officers, warrant officers or NCOs who have not attended the School of Infantry are deemed "qualified" if they have been instructed in the use of the weapon and the range work connected with it by a qualified instructor (*see* para 94) not below the rank of sergeant; in addition the commanding officer must be satisfied that they are competent to carry out the necessary duties.

96. The lowest rank that may take charge of the butts is a qualified sergeant (*see* also section 7).

SECTION 20—ACTION IN THE EVENT OF AN ACCIDENT

First aid

97. All ranks must realise that a knowledge of first aid and quick and intelligent action may save a life. This must always be the first consideration.

Technical

98. The procedure to be followed should an accident occur will be found in Ammunition and Explosive Regulations, Part 5, (WO Code No. 10446).

99. Those in charge on the spot should note the following local, and immediate, action to be taken:—

- (a) Make no attempt to strip or clean the weapon.
- (b) Make a thorough search for fragments of the metal.
- (c) Do not interfere with the weapon, grenade, shell, bomb or rocket, or fragments of them.
- (d) As soon as possible after the accident, get statements from witnesses on the sequence of events.
- (e) Make an immediate note of the batch or lot number of the ammunition.
- (f) Keep the next round to be fired.
- (g) Segregate at once the remaining rounds of the batch.
- (h) Note the weather conditions, state of ground and condition of the weapon.

100. This information is required by technical experts to discover the exact cause of the accident and to enable them to recommend modifications which may be found necessary in arms and ammunition and in existing safety rules and regulations.

SECTION 21—RECORDING AND REPORTING OF FAILURES AND DEFECTS IN WEAPONS, AMMUNITION AND EXPLOSIVES

101. All instances of defects and failures will be recorded, and a report will be made by the OC unit to the DDOS. Full instructions on the method of reporting can be found in "Ammunition and Explosives Regulations, Part 5 (WO Code No. 10446) Section 1. Such instances will be:—

- (a) Defects noted during the inspection of weapons, ammunition and explosives.
- (b) Failure of any part of the above material, eg, cap, fuze, detonator.

102. In making such records or reports, the following information will be obtained, if possible:—

- (a) Name of article, number, mark, etc.
- (b) Dates of manufacture and packing.
- (c) Name of manufacturer, packer's notes, etc.

103. A brief history of the article or material since arrival in the unit, ie, how stored, when opened and, in the case of ammunition and explosives, if taken out for use on a previous occasion and not used.

104. The defective article will, when possible, be segregated and retained for technical examination.

105. It must be clearly understood that the above paragraphs do not alter in any way the fact that blinds will on no account be touched but will invariably be destroyed where they lie, as laid down in Chapter 8. A report will be made in accordance with "Ammunition and Explosives Regulations, Part 5, Section 1 and Appendix 6".

CHAPTER 5

SAFETY RULES AND CONDUCT OF PRACTICES (ALL RANGES)

NOTE. *For danger areas, construction of targets and apparatus, see Infantry Training, Volume III, Pamphlet No. 32 (WO Code No. 9486)*

SECTION 22—CLASSIFICATION RANGES GENERAL

Normally only live ammunition will be taken on to any live firing range. If blank or bulletted blank is used in exercises then the strictest precautions must be taken to ensure that blank and ball are NOT mixed and that every round is accounted for. If, because of the nature of the exercise or the nature of the firing, this cannot be done then BLANK will NOT be used.

Use of red flag (by day)

106. No firing will take place until the main range danger flags are hoisted and look-out men posted in accordance with the range orders. One flag will always be on the stop butts, if in existence. Range orders are kept by the range warden. Flags are a warning that the range is in use.

107. In addition, a red flag will be displayed by the butt party as a warning that no firing may take place. This flag will remain up until the whole of the butt party is under cover in the markers' gallery. No one will leave the marker's gallery until the cessation of fire has been notified from the firing point and the red flags at the firing point and butts have been hoisted.

108. When firing is to cease, the firing point officer will normally give the order. The red flag in the butts will never be hoisted without permission from the firing point, except in an emergency.

109. A red flag will be hoisted at the firing point when no firing is taking place. It will always be up when the red flag is flying in the butts.

Use of red lamps (at night)

110. At night red lamps will be used at the firing point and in the butts instead of red flags in exactly the same way as red flags are used by day. Before a lamp is taken in or exposed for the first time it will be waved to and fro to attract attention.

Suspension of firing

111. If firing is suspended during a practice owing to some unforeseen happening, weapons will be made safe, placed on the ground (where applicable) and everyone will stand clear.

Inspection of weapons

112. The officer in charge of the firing point is responsible that all weapons are cleared and inspected before leaving the firing point. In the dark this will be done by feeling or using a torch. A further inspection will be carried out at the conclusion of firing (*see* para 127).

113. During inspection, loading and unloading, all weapons will be pointed in such a direction that no danger will arise in the event of a round being fired. LMGs will be unloaded in the shoulder and the sights aligned on the stop butts when pressing the trigger to clear the gun. On the command "For inspection port arms" rifles and SMGs and pistols will be held up at an angle of 60 degrees, pointing over the stop butts, thus ensuring less danger from ricochets.

114. After firing, live rounds will be sorted from empty cases and both collected separately.

115. AF B 159 will be completed—*see* QR, para 1047.

Repairs and replacements

116. No repairs or replacements will be carried out until a weapon is clear. No one but the gun numbers, authorized to be on the firing point by the conditions of the practice, will be allowed to touch the gun, without permission, when a stoppage occurs.

Duties on the firing point

117. No one except the firers, the coaches, the senior firing point officer and his assistants will be allowed on the firing point. No weapon will be initially loaded without orders from the senior firing point officer.

Drill cartridges

118. Drill cartridges will not be taken on the range except for use in stoppage practices. In this instance the drill cartridges will be taken to and from the range under the orders of the company, etc, commander and their subsequent collection will be most carefully supervised.

Night Firing

Amdt 4/Mar/1961 Night, care should be taken to site weapons where no danger of safety exists.

121. When a 7-62-mm bullet is used against a mild steel plate, the core invariably goes through on its own, the envelope being stripped off and thrown backwards. Although the velocity of the envelope is not high, it does travel up to 40 yards and is likely to cause injury.

The 7-62-mm bullet will not penetrate the new type armour plate, but injury may be caused by the bullet ricocheting from the plate.

The following additional safety precautions will be taken when firing 7-62-mm ammunition at falling steel plates:—

- (a) On a classification range where the distance from the plates on the face of the stop butt to the markers' gallery is less than 50 yards, the markers must not be permitted to remain in the open part of the gallery. Suitable shelter would be the range workshop or store, provided the door is closed and markers do not stand by windows facing the plates.
- (b) Where no suitable shelter is provided in the gallery, the markers must come out and stand at either end of the following places:—
 - (i) Behind the firing point in use.
 - (ii) Outside a line drawn at an angle of eleven degrees from the line of fire of the flank target (this angle will give a distance of 40 yards when firing from 200 yards and 60 yards when firing from 300 yards.) They must not stand beyond the gallery.
- (c) On a field firing range, falling plates must not be placed within 50 yards of the open front of a markers' shelter.

Range discipline and conduct of practices

122. Every man must:—

- (a) Arrive on the firing point unruffled and completely prepared for the practice(s) to be fired, and,
- (b) Get the best possible advice on the firing point.

123. The following is the normal procedure, the principles of which can be adapted for all weapons on any range:—

- (a) The party to fire is brought to within about 100 yards of the firing point.
- (b) The coaches, ammunition party, telephone orderlies and look-out men take up their positions. Some of the latter may have to be put out much earlier as their posts are often a long way from the range.
- (c) The practices to be fired are explained. Any points concerning weather conditions, especially wind, should be mentioned.
- (d) Firers are detailed to targets and given the order of firing; this is then written down on the firing point register which will have been previously made out with names only.

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The first two details are sent to the ammunition point where they are issued with ammunition for the practice they are about to fire. They are to load it into their magazines as ordered or retain as belts. During the progress of firing there should be only three details in possession of live ammunition: one on the firing point, the waiting detail, and the third in the process of drawing ammunition before moving up.

The coaches, if allowed, will hold up their hands to inform the firing point officer that the firers are ready.

The firing point officer then orders "Load—Carry on Coaches" or, if no coaches are allowed, gives the necessary executive order.

- (g) On completion of a detail the firing point officer orders "Check—Unload"—and gives the necessary orders for inspection of arms according to the type of weapon being used. See paras 112 and 113. On the order "Check", the telephone orderly gives two short rings (see also Section 14).
- (h) When weapons have been inspected the firing point officer orders "Details change". The second detail goes to the firing point while the detail that has just fired goes back to the ammunition line, hands in empty cases, magazines, belts, etc. and then goes back to the assembly line where their shooting is discussed by a responsible officer.

124. The result of the above procedure should ensure that there is:—

- (a) One detail on the firing point, with an experienced coach to each firer, if coaching is allowed.
- (b) One detail waiting to fire 25 yards behind the firing point fully prepared for shooting and watching the conditions of the practice. Every man opposite his target. When there are not sufficient coaches this second detail may be on the firing point acting as assistant coaches. See Infantry Training, Vol I Pamphlet 3, page 70, para 21 (WO Code No. 8903).
- (c) One detail on the SAA line 50 yards in rear of the firing point. A NCO should be with this detail to inspect SAA, magazines, belts, etc. to see that the SAA is clean and properly packed in pouches.
- (d) One detail on the assembly line 100 yards in rear of the firing point. With this detail there should be one or two experienced officers, warrant officers or NCOs checking, before it is too late, to see that all preliminaries have been carried out (eg, sights blacked, barrel dry, correct parts of weapons oiled, slings of rifles loosened, AB 142 handy); also to make sure that the firers understand the practice to be fired, the target they are detailed to, and to refresh them on firing conditions.

125. Further relevant points on range organization are as follows:—

- (a) Good range discipline shows itself as quiet, efficient organization, no unnecessary shouting or talking, efficient butt marking and no unnecessary loss of time.
- (b) In rifle and LMG snaphooting practices, targets will be exposed for trial as to correct height and position. To avoid unnecessary shouting and irritation, orders to the butt markers to alter the position of targets should be:—
 - (i) To alter direction. Example—"Move No. 3 two feet towards No. 2".
 - (ii) To alter elevation. Example—"No. 2 go up two feet".

126. Should there be more than four details waiting to fire, some form of instruction should be laid on to keep these details interested and avoid waste of time. Anything involving violent exercise should be avoided, as this might affect their shooting.

Conclusion of firing

127. Before the firers leave the range, the officer in charge is responsible that the following are inspected to make sure they are clear of live ammunition.

- (a) All weapons.
- (b) All magazines, belts, belt boxes and any other ammunition containers.
- (c) The firers' pouches.

128. The whole range party will be reminded that they must not have any live ammunition in their possession except when it is issued for operational purposes or when they are on a range for live firing.

129. AF B 159 will be completed; see QR, para 1047.

130. The range areas will be cleaned and all refuse burned or buried.

SECTION 23.—TWENTY-FIVE YARD RANGES

131. A red flag will be used on the firing point. It will be lowered when firing is in progress.

132. Only .22-inch, .32-inch, 7.62-mm, .300-inch, .303-inch, 7.92-mm, 9-mm, .45-inch and .38-inch ammunition may be fired on normal 25-yards ranges. The minimum range at which rifles, LMGs and MMGs will be fired is 25 yards, because of the danger of backslash.

133. Tracer ammunition will not be used.

134. Practices involving the use of crossing targets will not be fired.

135. Firing LMGs from the hip is not permitted.

136. During loading, unloading and inspection, weapons will be held parallel to the ground, pointing in the direction of the bullet catcher.

137. No one will go to the targets until all weapons have been unloaded, inspected and permission to go has been given by the officer in charge.

138. Pistols will be kept in their cases until actually required for use. During loading and unloading and all the time they are loaded, pistols will be pointed towards the butts. Indiscriminate snapping is forbidden.

139. Targets will be placed in front and at or near the foot of the sand bullet catcher. Harmonization targets will be so placed that the plain screen is in front of the bullet catcher.

140. No target will be placed within four feet of either end of the bullet catcher.

141. Metal plates will not be used as targets.

142. The maximum number of weapons which may be fired at stationary targets on a standard range (24 feet wide sand bullet catcher) is six rifles, four LMGs, four MMGs, four SMGs or four pistols. For other range widths the number will be proportionate.

143. Practices involving the advance of the firers may be fired provided that strict range discipline is observed. Not more than two firers are to fire at the same time.

144. The sand bullet catcher will be kept loose and free from stones or other hard material. They will be maintained in good condition and at the correct dimensions (see Infantry Training Vol III Pamphlet 32, Plate 21 (WO Code 9486)) by the unit responsible for maintaining the range. Frequent removal of lead from the bullet catcher is necessary.

145. The range will be left clean and tidy after use.

146. Only firers, coaches, the firing point officer and his assistants are allowed on the firing point. Waiting details must be at least ten yards from the firing point or in the shelters provided. During the firing of rifle, LMG and MMG practices, the firing point officer may make special arrangements to call up those waiting to fire, to a position from which they can hear the instruction and criticism but they must be at least five yards behind the firers.

147. During SMG firing, coaches will stand looking over the firer's left shoulder. No one must stand close to the right shoulder of the firer from the moment "Load" is given until the order "Unload".

148. All 25 yard ranges must be equipped with a copy of Regulations for the use of 25 yard ranges" (WO Code No. 10020). 6071

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(c) Under certain circumstances, .22 rifle clubs may reduce the distance between firers to 4 feet 6 inches. (See Infantry Training, Volume III, Ranges and Courses, Pamphlet No. 32, Page 155, Para 548A, as promulgated by Amendment No. 1 to that pamphlet.)

150. Normal range discipline as for 25 yard ranges will apply (see section 23).

151. Pistols will not be drawn from their cases except for inspection or for firing. Indiscriminate snapping is NOT allowed.

SECTION 25—SUB-MACHINE GUN RANGES

152 1/May/1960

(Under certain circumstances, .22 rifle clubs may reduce the distance between firers to 4 feet 6 inches. (See Infantry Training, Volume III, Ranges and Courses, Pamphlet 32, Page 155, Para 548A, as promulgated by Amendment No. 1 to that pamphlet.)

153 section 154. Indiscriminate snapping is not allowed, except on the targets.

SECTION 26—GRENADE RANGES

General

155. Everyone in the danger area, including waiting details and spectators, will be behind blastproof cover or in a trench and will wear steel helmets.

156. A medical orderly, with first aid appliances, and an ambulance will always be in attendance when live ammunition is being used. If an ambulance cannot be made available then a suitable vehicle in lieu must be provided.

157. All danger flags must be raised, look-out men posted and the whole of the ground included in the danger area must be clear of persons and livestock.

158. No grenade will be thrown or fired and no weapon will be loaded or fired without a direct order from the officer in charge.

159. Demolition equipment for the destruction of blinds will always be taken to the range (*see* chapter 8).

160. Local range orders, rules and regulations must be observed.

The 36 grenade (recruit throwing)

161. As an aid to smooth running of each detail, a demonstration to show what each man must do during practice should be given by the conducting officer and supervising NCOs; stones may be used to represent grenades.

162. It is the duty of the officer conducting live practices to foresee the possible incidents that may occur, through nervousness or through failure in the material being used, which are likely to endanger those taking part. He must instruct NCOs and men in the immediate action to be taken. For example, should a 36 grenade be dropped in the bay in the act of throwing, the NCO must *immediately* force the man behind cover round the traverse, before taking cover himself.

163. Sections will be told off into details, men issued with the number of grenades they are to throw and sent into their shelters.

164. Supervising NCOs will then take their places in the priming and throwing bays. Those detailed for the priming bays will have with them the necessary number of igniter sets in their boxes.

165. The conducting officer will take his place at the control point or post, taking with him the demolition box and any spare grenades. Having satisfied himself that all safety regulations have been complied with, he will lower the control post flag and order the first detail into the priming bays.

166. The first detail will then prime their grenades and pass on to the throwing bays; the second detail will at once take the place of the first in the priming bays.

167. Only those grenades will be primed which are to be used before men return to the shelter. Primed grenades will on no account be taken into a shelter.

168. Should the practice be cancelled for any reason before the number of primed grenades have been used, the NCOs in the throwing or priming posts will see that the unused grenades are unprimed. This rule does not apply to temporary stopping of a practice due to a blind.

Orders given and action taken during practice

169. When throwing practice is being carried out the procedure will be as follows:—

Orders given by conducting officer	Action taken by supervising NCOs and throwers
------------------------------------	---

“ No. 1—Ready ”

No. 1 adopts the “ Ready ” position. The NCO will hold up his hand as a signal to the officer when this has been done.

“ No. 1—Throw ”

No. 1 prepares the grenade for throwing, throws, observes the flight of the grenade and takes cover.

“ No. 2—Ready ”

“ No. 2—Throw ”

If there are more than two bays, the procedure will be the same until all have thrown one grenade. No. 1 will then be ordered to throw his second grenade, the same sequence being followed until all grenades have been thrown by the first detail.

“ Details—Change ”

First detail moves to the shelters. Second detail replaces the first in the throwing bays, and the third detail moves into the priming bays.

The conducting officer will observe the actions of the thrower and the flight of the grenade. He will give the order “ Down ” as soon as the grenade hits the ground. The NCO in the throwing bay will give the order “ Down ” as soon as he sees the grenade hit the ground, whether he has heard the order from the conducting officer or not.

80 grenade

170. When the smoke effect of these grenades is being demonstrated, spectators must be well clear of the 15 yards danger area; the grenades easily set fire to dry grass, etc. Care must be taken not to kick “ blinds ” which should be destroyed in the same way as the 36 grenade.

83 grenade

171. No precautions except those directed by the No. 91 grenade

171A. The No. 91 grenade has no danger area, but blinds destroyed as for No. 36M grenades.

as for the No. 36 grenade.

173. For disposal of blinds (*see* chapter 8).

174. Normal range discipline will apply (*see* paras 122 to 129).

Throwing (trained soldiers)

175. Trained soldiers who have thrown live HE grenades under recruit conditions can be exercised in the throwing of all types of grenades from behind natural cover in the form of minor tactical exercises.

176. The conducting officer, in framing these exercises, must be guided by a knowledge of the rules and by common sense.

In drawing up the rules he will ensure that:—

- (a) The man being exercised throws from behind cover.
- (b) No-one except the thrower is in the danger area unless under cover.
- (c) An efficient system of fuzing and de-fuzing grenades is laid on.
- (d) The cover selected for those in the danger area is at least 30 inches of earth or its equivalent.
- (e) All throwers and instructors are rehearsed in the action to take should a grenade be dropped with the safety pin out.

SECTION 27—LIGHT MORTAR RANGES

NOTE. A light mortar is one of 60 mm calibre and below, fired in its hand-held role

General

177. Para 155 to 160 will apply.

178. A NCO will be detailed to supervise each mortar. Junior NCOs may be used for this task provided that they have been trained and rehearsed in their duties by a qualified officer, warrant officer or senior NCO. The NCO in charge of each mortar will be responsible:—

- (a) that the safety cap (and in the case of 161 and 162 fuzes, the safety bolt) is removed from each bomb before loading;
- (b) that each bomb is loaded tail first into the mortar;
- (c) that both crest and local clearance is assured;
- (d) for following the flight of each bomb, so that, if it is a blind, he can note its position;
- (e) for reporting all blinds, as they occur, to the officer in charge.

179. Targets less than 200 yards away from the mortar position will NOT be engaged.

180. The mortar will be fired from behind a low sandbag wall or other suitable cover, the mortar positions being 20 yards apart.

181. Only the officer in charge, instructors, firers and, if necessary, loaders will be on the firing point. Waiting details and spectators at demonstrations will be outside the danger area or under cover in rear of the firing line.

182. Only the amount of bombs necessary to fire one detail will be on the firing point. All other bombs must be on a ready line outside the danger area, or under cover a suitable distance in rear.

183. Bombs will not be prepared for firing until the order to "~~Load~~" is given. **BROUGHT TO THE FIRING POINT.**

184. Firing must stop when any aircraft flying at any height enter the danger area.

185. For disposal of blinds see chapter 8.

Smoke bombs

186. 2-inch mortar smoke bombs may be fired on any piece of ground which conforms to the danger area template as shown in Infantry Training, Volume III, Pamphlet No. 32 (WO Code No. 9486). The ground should be reasonably free from fire risks and completely free from persons and livestock. The target area must be in view from the firing position.

187. Mortars can be fired in the open.

188. Normal range discipline will apply (see paras 122 to 129).

189. For disposal of blinds and misfires see chapter 8.

Sandfilled bombs

190. The rules for smoke bombs, with the exception of para 189 will apply; fire risks need not be considered.

191. Precautions will be taken to ensure that armed, sandfilled bombs are not returned to store.

SECTION 28—MEDIUM MORTAR RANGES

NOTE. A medium mortar for the purpose of range work is one, of 81-mm, 3-inch or 60-mm, fired using a bipod and baseplate

192. Paras 155 to 160 will apply.

193. No one, including OPs and MFCs, must be in the danger area as shown by the template of the danger area which must be in possession of the supervising officer.

194. The supervising officer will be responsible that the officer or NCO with the fire controller will:—

- (a) Ensure that bombs are fired within the limits of safety, both for elevation and direction.
- (b) Watch for the fall of blinds.
- (c) Detail the instructor at the mortar position to see that all bombs are fired within certain specified safety limits, both for elevation and direction.

195. The supervising officer will:—

- (a) Ensure that all range safety orders are issued and understood.
- (b) Be in possession of a safety slip which should correspond with the one at the baseplate showing:—
 - (i) Maximum left and right of arc, zero line.
 - (ii) Maximum and minimum range permitted.
- (c) Have in his possession a template of the danger area.

196. The NCO in charge at each baseplate will:—

- (a) Ensure that there is muzzle clearance at the mortar position and that the baseplate and tripod positions are prepared.
- (b) Ensure that the mortar is laid safely for elevation and direction and that the correct range is on the sight.
- (c) Ensure that bombs are fired with the correct number of secondaries.
- (d) During re-laying, check the sight to see that the drums and dials read correctly.
- (e) Warn the OP in the event of bombs being fired off line or very short.
- (f) When additional NCOs are available they may be detailed to be responsible for some of the above points.

197. Firing must stop when any aircraft flying at any height enters the danger area. The OP and baseplate supervisor have equal responsibilities in keeping a lookout for aircraft and to order "Stop Firing".

198. For disposal of blinds *see* chapter 8.

Smoke bombs

199. The rules for HE will apply.

Sand filled bombs

200. The primary charge only will be used.

Precautions will be taken to ensure that no armed, sand filled bomb is returned to store.

201. Normal range discipline will apply (*see* paras 122 to 129).

Demonstrations

202. During demonstrations:—

- (a) Mortars must be fired from a standard mortar emplacement if the spectators' stand is within 300-yards of the mortar position.
- (b) Spectators will NOT be in the danger area.

SECTION 29—SECTION ANTI-TANK WEAPON RANGES

General

203. Paras 155 to 160 will apply.

Live grenades

204. Firing will take place from blast-proof firing bays or fire trenches. Only one firer and one instructor will be present in the firing bay or trench when a grenade is fired.

205. No one within 150 yards of the point of impact of a grenade will watch it explode, but will remain behind cover.

206. A NCO will be detailed to supervise each firer.

207. A NCO will be detailed to count all grenades fired and the number of explosions that take place. He will carefully note the position of all blinds. He will do this from outside the danger area.

208. During training no target will be engaged at a range of less than 75 yards.

209. Firers will fuze their own grenades on the range in blast-proof fuzeing bays or trenches, under the supervision of instructors. Each grenade will be fuzeed with only one firer and one instructor present in the bay or trench. Any grenades that have been fuzeed but not fired will be defuzed before they are taken off the range.

210. After it has travelled five feet, a live grenade is liable to explode if it grazes the ground or hits any obstruction such as a hedge or the foliage of a tree; there must, therefore, be an absolutely clear line of fire from the firing point to the target.

211. If a grenade cartridge misfires, the firer will load with another cartridge and go on firing. A supply of spare cartridges will be available on the range.

212. (a) Grenades found to have damaged tail tubes or fins will not be used, but will be treated as blinds and destroyed.

(b) Ammunition packages found badly damaged will not have the ammunition or fuzes removed, but will be segregated for inspection by an IOO.

213. Normal range discipline will apply (*see* paras 122 to 129).

214. For disposal of blinds *see* chapter 8.

Practice grenades

215. The extreme range of the grenade is 300 yards. It is therefore safe to fire practice grenades anywhere provided that the danger area is available and that:—

- (a) the ground is clear of persons, livestock and anything likely to be damaged by a grenade;
- (b) reasonable care is taken at the firing point that firers do not shoot wide;
- (c) red flags are put out to mark the limits of the range;
- (d) a qualified officer, warrant officer or sergeant supervises.

216. Soft ground should be chosen; it will lengthen the useful "life" of the grenades.

SECTION 30—PLATOON OR COMPANY ANTI-TANK WEAPON RANGES

NOTE. Paragraphs marked with an asterisk apply to firing HE rockets only, unmarked paragraphs apply to both HE and practice rockets

General

217. Paras 155 to 160 will apply.

218. Before firing HEAT rockets everyone should, if possible, fire at least one practice rocket to get the feel of the launcher as the rocket leaves the barrel.

*219. HEAT rockets may only be fired from an emplacement. If there are two or more emplacements they must be level with each other.

220. Practice rockets may be fired in the open. Both types of rockets can be fired in the standing, kneeling, sitting or lying position.

221. Only one launcher may be fired at a time.

222. Each launcher will be supervised by a qualified officer, warrant officer or NCO. These supervisors must be alert and ready to act quickly if the firer jerks the muzzle down so that there is a risk of the rocket hitting the ground too near the emplacement. They will control the firer throughout the practice and ensure that the launchers are always pointing towards the target area.

*223. The firer, loader and instructor will watch the flight of the rocket, but will get down behind cover before it hits the ground or target—they will not watch the explosion.

*224. Everyone else in the danger area will be behind blast-proof cover or under cover in a trench and will not watch the firing of the launcher nor the flight or explosion of the rocket.

225. (a) *The back blast area*, a triangle with the length and base each 25 yards long, the apex of which is the rear end of the launcher, will be clear of men, ammunition, stores and equipment.

(b) *The "ready line"*, where waiting details are organized with their stores and equipment, will be at least 50 yards behind the firing point. No one will move forward of the "ready line" without the permission of the conducting officer.

(c) Launcher teams will be given their rockets on the "ready line", and will inspect both them and their other equipment. They will see that rockets are protected from the direct rays of the sun.

226. (a) No weapon will be loaded and no one will fire without a direct order from the conducting officer, who will be present throughout the firing.

(b) No launcher will be moved back from, and no one will approach or leave the firing points without permission from the conducting officer.

(c) All loading, unloading and inspection of ammunition will be carried out in correct firing positions.

(d) Misfires will be unloaded on the order of the conducting officers only.

227. Rockets will not be fired outside their safe temperature limits. These limits are marked on the motor in red inside a red circle.

228. Nos. 1 and 2 and the instructor will wear face masks for all firing, as a protection against particles of unburnt propellant that may come back from the rocket as it leaves the muzzle of the launcher.

229. A NCO will be detailed to count all rockets fired and the number of explosions that take place. He will carefully note the positions of all blinds.

230. The launcher will not be fired with any substantial solid object within 25 yards behind it. If it is fired from a trench, it is important to see that there is a clear space immediately behind the launcher.

231. During training no target will be engaged at a distance of less than 100 yards.

232. For disposal of blinds *see* chapter 8.

233. Practice rockets will not be fired on a HE rocket range.

234. Normal range discipline will apply (*see* paras 122 to 129).

SECTION 31—BATTALION ANTI-TANK WEAPON RANGES

General

235. All danger flags must be raised, look-out men posted and the whole of the danger area must be clear of persons and livestock before firing can start.

236. NO firing will start until authorized by the officer in charge of firing point.

Amdt 4/Mar/1961 details may stand on the firing point alongside the

237. Spectators and waiting details may stand on the firing point alongside the gun except under the conditions laid down in paras 240 and 241. No one is allowed to move in rear of the breech of a gun which is manned. To prevent this, the limit of such movement should be clearly marked.

238. First aid kit, an ambulance, and, if possible, a medical orderly should be on the range. If an ambulance is NOT available a suitable Amdt 4/Mar/1961 provided for the purpose.

240. When HESH ammunition is fired at ranges under 700 yards:—

- (a) No troops may be in the open within the danger area marked by the template.
- (b) The gun and the detachment will be in a gun pit or sandbagged and the crew will wear steel helmets.
- (c) The minimum range to the target will be NOT less than 400 yards and will be confirmed with an inert round before firing live.
- (d) The supervising officer or NCO must have overhead cover of at least 1/2-inch mild steel or its equivalent.
- (e) In the case of the 120-mm BAT the roof shield must be in position and there must be NO gap under the shield.

241. When firing HESH at ranges over 700 yards, small numbers of spectators may be in the open alongside the gun provided that they are not within the backblast danger area. For large scale demonstrations, spectators must be 1000 yards from the point of burst of the HESH shell.

is allowed in the open within the danger area marked by the template. than nine yards in front of a solid object, such as a wall or very steep bank, which might deflect blast back on to the crew.

243. Normal range discipline will apply (see paras 122 to 129).

Officer in charge of practice

- 244. (a) The officer in charge of practice is responsible for the safety during the practice of the unit or units under his command. Any departure from the safety instruction for the practice as given in range orders can only be authorized by him and is his entire responsibility.
- (b) His adviser on all matters of safety is the instructor in charge of the practice of his unit.
- (c) Any detailed local instructions necessary for the safe conduct of the practice of units under his command will be issued in writing by the officer in charge of practice.

Officer in charge firing point

245. An officer who has qualified at the Support Weapons wing of the School of Infantry will be detailed as officer in charge of firing point.

246. If more than one gun is firing at the same time an officer or senior NCO will be detailed for each gun as an instructor.

Duties of observer in the control tower

247. The observer in the control tower will normally be the range officer, he must be familiar with the range. His duties are:—

- (a) to assist the officer in charge firing point, by explaining the range layout and working arrangements;
- (b) to ensure that the range is clear and report that it is so to the firing point officer before firing begins;
- (c) to keep a continuous watch over the target area; binoculars will be required;
- (d) to pass the order "Stand fast" to the officer in charge firing point if any unauthorized party enters the danger area or if there is any unauthorized movement of the range parties;
- (e) to inform the officer in charge firing point if any technical fault in the targets has occurred and, after receiving a report that it is safe to do so, order out the necessary range maintenance party.

Duties of the officer in charge firing point

248. His duties are to ensure that:—

- (a) He receives the report "Range clear" before he allows firing to begin.
- (b) Firing is stopped at once and guns unloaded immediately if any unauthorized persons, vehicles, ships or aircraft enter the danger area.
- (c) No ammunition other than that laid down in range orders is fired. HESH or HE must NOT be fired on that part of the anti-tank ranges where there are mechanical target runs or markers' shelters.
- (d) No gun is fired at an unsafe line or elevation. On all anti-tank ranges the limits of arc will be marked.
- (e) He obtains from the range officer what these markings are and passes on this information to the instructors and ~~Nos. 1~~ with each gun, before firing begins. *ALL PERSONNEL*
- (f) No range parties leave their shelters for any reason without his permission. Before giving such permission firing must be stopped and all guns unloaded.
- (g) Where a safety stop is in use, it is adjusted so that the maximum QE cannot be exceeded.
- (h) When more than one gun is firing, the instructors with the gun are made responsible for the duties laid down in sub-para (b), (c), and (d). *X LMG MAGS.*
- (i) At the end of firing all guns are inspected to make sure that they are unloaded.
- (k) Action is taken to mark or destroy all blinds.
- (l) Misfires and "overgauge" rounds are each segregated at the end of the practice for return to RAOC according to current instructions.
- (m) Defect reports are submitted to higher authority in the case of HESH blinds, misfires and damaged or "overgauge" rounds.

SECTION 32—ANTI-AIRCRAFT (HOSEPIPE) RANGES

249. An officer, warrant officer or NCO will be detailed as a look-out; his duty will be to warn the officer in charge of firing of the presence of any aircraft in sight.

250. All firing must stop when any aircraft enters the danger area no matter at what height they are flying.

251. There must be a pre-arranged cease fire signal.

252. Units must warn their next immediate headquarters that firing is to take place.

253. A red flag six foot square must be hoisted at the firing point when firing is in progress.

254. Firing will not take place at angles of elevation of less than 25 degrees.

255. Those firing mortar parachute illuminating flares or releasing balloons must, if positioned inside the danger area, be behind adequate protective cover.

256. Targets will not be engaged outside the target area. A NCO must be posted behind each gun to stop the No. 1 firing should he be about to follow a target going outside the danger area.

257. Only LMGs firing .303-inch or 7.62-mm SAA will fire on these ranges.

258. Local range rules and orders will be observed.

259. Normal range discipline and procedure will apply (*see paras 122 to 129*).

260. Reserved.

SECTION 33—5-inch BROWNING AA RANGES

261. An officer, warrant officer or NCO will be detailed as a look-out; his duty will be to warn the officer in charge of firing of the presence of any aircraft in sight.

262. All firing must stop when any aircraft enter the danger area no matter at what height they are flying.

263. There must be a pre-arranged cease fire signal.

264. Units must warn their next immediate headquarters that firing is to take place.

265. A red flag six foot square must be hoisted at the firing point while firing is in progress.

266. Firing can be at either ground targets on a field firing range with a long enough danger area or at balloons or towed targets on an AA range. Firing will NOT take place on a classification range.

267. Field firing ranges (ground targets)

- (a) Penetrable targets only will be used.
- (b) Firing will take place from pits two feet six inches deep by two feet six inches wide or from vehicles. The gun on its ground mounting will be mounted over the pit.
- (c) Balancing springs should be adjusted so that the gun is pointed as low as possible.
- (d) Local range rules, regulations and discipline must be observed.

268. Anti-aircraft ranges (AA role)

- (a) Toy balloons and cylinders of hydrogen gas are sometimes obtainable by indent on RAOC through the normal channels. A special key is required to operate the cylinders, which, if not issued with the cylinders, can be obtained from the local DCRE.
- (b) Towed sleeve targets may, on occasions, be arranged by liaison with local RAF.
- (c) Firing must not take place at elevation less than 25 degrees.
- (d) Local ranges rules and regulations must be obeyed.

269. Following is a method of running range shooting from either ground or vehicle stands and at ground or air targets:—

- (a) Organize the men into details of two, a No. 1 and a No. 2. A NCO must look after each gun.
- (b) Order "First detail, up"—the detail takes post at the gun.
- (c) Order "Load"—when the gun is loaded, the supervising NCO signals that it is ready.
- (d) Order "One burst of ten rounds (or two to three seconds)—Fire"—the NCO criticises results. Repeat this process once.
- (e) Order "Change round"—No. 1 puts the bolt latch lever at "UP": Nos. 1 and 2 change places.
- (f) Repeat (d).
- (g) Order "Stand clear"—No. 1 puts the bolt latch lever at "UP" and Nos. 1 and 2 fall in behind the gun.
- (h) Order "Details change".
- (j) Do not order "Unload" until all firing has finished, or there will be a stack of live rounds under the gun by the end of the day.

270. Normal range discipline will apply (*see paras 122 to 129*).

SECTION 34—SMALL BORE (MINIATURE) RANGES

271. (a) When it is necessary to examine the targets, rifles will be unloaded and laid on the firing point with the breeches open, and the red flag will be raised before anyone goes to the targets.

(b) No one will go to the targets unless ordered to by the firing point officer.

272. Only .22 ammunition will be used on small bore ranges.

273. (a) Accidents have occurred as a result of a bullet striking the barrel of a rifle.

Page 34. Insert new para 273A:—

Amdt 3/May/1960

273A. Bulges in the barrels of No. 8 rifles are caused by a bullet failing to clear the barrel before being struck by the next one fired. To minimize the risk of this occurring:—

(a) The bores of .22-inch rifles will be inspected:—

(i) Before and on conclusion of firing.

(ii) Whenever the noise made by the explosion of the charge is less than usual.

(iii) Whenever the bullet is not heard to strike the target or butts.

(b) If excessive fouling is noted, the bore will be thoroughly cleaned before firing is resumed.

(c) In the event of a bullet becoming lodged in the bore, the unit will:—

(i) Withdraw the rest of the batch of ammunition and put it aside for inspection by the I.O.O. If this is likely to result in training being curtailed, immediate replacement will be sought through G (Training).

(ii) Send a defect report (AF G 3660) to the ADME concerned, with a copy to the ADOS. The defect report will include the batch and lot numbers of the ammunition which are to be found on the inside of the box lid.

Exercises

276. Exercises with live ammunition on a field firing range are the culmination of weapon training. The field firing range provides conditions most nearly akin to battle, and shooting on other ranges will be regarded as a means to reaching efficiency in this final phase of training.

277. There are strict safety rules to prevent accidents, although it is impossible to lay down a rigid rule to cover all circumstances and still obtain that realism which is so essential to good training.

278. The rules which follow should be interpreted with common sense and used in conjunction with local conditions, rules and ground.

279. Preventable accidents will not happen if officers directing or conducting exercises:—

(a) study the range orders, safety rules and regulations and apply them with common sense;

(b) know the characteristics, performance and danger areas of the weapons they are using;

(c) understand that a bullet hitting the ground, especially at short ranges, may ricochet off at an unpredictable angle and with great velocity.

(d) make certain that bullets do NOT hit the ground between the firers and the troops, even if the troops are to a flank of the line of fire;

(e) remember that, if the area is rocky or stony, extra care must be taken, as the behaviour of bullets hitting such ground is

Page 35. Para 279. Add new sub-para (f):—

Amdt 3/May/1960

(f) **Never allow any weapon which has been loaded to be left unattended.**

ranges. Officers in charge of such demonstrations must take into consideration these facts:—

(a) A large number of spectators assembled in a "stand" is a vulnerable target. If a missile, ie, bullet, bomb, shell or a fragment goes in the general direction of the spectators, casualties are inevitable, because of the large area which a mass of spectators presents.

(b) Such demonstrations must NOT be confused with battle inoculation which is a form of battle training, where men are dressed for battle, usually dispersed and under cover.

SECTION 36—FIELD FIRING EXERCISES

NOTE. The aim of field firing exercises is to practise fieldcraft, visual training, weapon handling, fire control and firing at battle targets under realistic conditions.

Individual battle practices

281. Instructional and classification practices are designed to practise and test the soldier in the elementary stages of shooting; they are also suitable for classifying his ability to shoot. Transitional practices on a classification range are the intermediate stage between this elementary stage and the final phase of training.

Field firing

282. Before the soldier can take part in section or platoon field firing exercises he must be trained as an individual by means of individual battle practices.

283. The principle throughout must be the training of the individual to shoot quickly and accurately and to handle his weapons with safety, under conditions as similar to battle as possible. It must be left to commanding officers to frame their own practices according to the facilities, time and the type of operation for which the unit is training. The exercises laid down in Infantry Training, Volume I, Pamphlet No. 11, Trained Soldiers (All Arms), Exercise in Handling of Weapons, 1955, (WO Code No. 8930) can be used as a guide.

284. These practices should be carried out on a field firing area. Only as a last resort should they be fired on a classification range; if they are, then firing points and targets at fixed ranges should not be used. Targets should be exposed from specially constructed marker pits.

285. Accuracy and quickness of fire at moving, fleeting and stationary targets from all positions both during and after movement is the prime consideration; but the use of ground, cover, the safe handling and care of arms and all points of elementary weapon training and fieldcraft should be taken into consideration.

286. Firers should always be told, and if possible see for themselves, the effect of their shooting; credit should be given for effective battle accuracy, ie, bullets which can be seen by observation to be near enough to the target to keep the enemy heads down.

287. The practices are therefore designed to train the individual rather than to act as a test.

288. While remaining simple, the more realistic the practices are made, the greater will be the results obtained.

289. Targets should be realistic and at service ranges, eg, the individual infantryman's target in battle is invariably a man at ranges from point blank to about 200 yards, usually indistinct, and probably obscured by the smoke and dust of battle. Whenever possible, targets should be made to fall or disappear when hit.

Section field firing exercises

290. The section field firing exercise is the ideal level to practise men as a team in battle shooting and NCOs in fire control.

291. If the aim is to practise the men only, then the section commander requires briefing and rehearsal in the orders he has to give and the movements of his section. If, on the other hand, the aim is to practise the NCO in fire control and the handling of his section in battle, then this briefing and rehearsal is unnecessary. Such NCO training, should, whenever possible be done on NCO cadres, because the men's training and morale will suffer if an exercise has to be continually interrupted because of the shortcomings of an untrained NCO.

292. The remarks on individual battle practices apply equally to section exercises with the following additional points:—

- (a) Men should have been taught and exercised in:—
 - (i) all individual training;
 - (ii) section formations and field signals;
 - (iii) section handling (*see* Infantry Training, Volume I, Pamphlet No. 6 (WO Code No. 8910) Lessons 10 and 11.
- (b) Most of the points for platoon exercises (*see* paras 293 to 308) also apply.
- (c) Ranges can be increased up to 400 or 500 yards at suitable targets.

Section and platoon exercises

293. A platoon exercise can be staged quite easily on almost any small field firing range, with great realism and with benefit to every man taking part.

294. The aim of the exercise is as given in para 281 and is *NOT* to practise the platoon commander in giving orders and handling his platoon.

295. The platoon commander must be thoroughly briefed and rehearsed beforehand. He will then issue orders which will ensure that the battle takes place according to the director's plan, with the result that the section commanders and their men will get full value and, what is equally important, interesting training.

296. The director should first decide on the type of scheme and from that the type of area required. Next find the most suitable area and then *adapt the scheme to fit the ground*, conforming, of course, to the local safety regulations.

297. Every section or group should move at least once, and preferably twice or three times, during the exercise. Men should not be required to move hundreds of yards without firing; the exercise is "field firing"—long approach marches and infiltration tactics can be practised at some other time.

298. The exercise should be short, snappy and full of interest, with plenty of "noises off" and as few dull moments as possible.

299. Every man should fire as much as possible provided, of course, that it is not haphazard "blazing away".

A suggested allotment is:—

Rifle	...	...	...	30 rounds for each rifleman.
LMG	...	...	...	15 magazines (several men in the section firing).
SMG	...	...	...	5 magazines for each man.
Light mortar	...	...	...	18 smoke bombs.
Grenades	...	...	...	Smoke and practice, according to the nature of the scheme.

300. Supervisors are most important and on them depends the success or otherwise of the whole exercise. They should be the same for each platoon in the company as this avoids extra rehearsals. For these supervisors' duties, *see* para 318.

301. Supervisors should only interfere with the running of the exercise when safety is involved. Points of criticism should be brought out at the final conference.

302. Targets must be as realistic as possible and at service ranges. A puff of smoke appearing at the same time as the target adds to the realism and enables the target to be indicated without assistance from the supervisor.

303. "Effects" men (who pull up the targets and make the "noises off") must be in suitable bullet proof shelters. They must also be controlled by telephone or flag signals, which the troops taking part can neither hear nor see.

304. An inter-platoon competition may be run, as each platoon can be marked for fire effect, fieldcraft, weapon handling, etc. Realism, however, is more important than competition, and everything that detracts from it must be avoided. Moreover it will be found that a realistic exercise interests the men on its own merits without the introduction of the competitive element.

305. Before the exercise, the director takes out all platoon commanders, supervisors and "effects" men and runs right through the exercise, including the platoon commander giving out orders, the supervisors walking over the approximate route which their sections are likely to take and the "effects" men doing their jobs at the right times.

306. To conduct the exercise:—

- (a) Clear the range, post look-out and "effects" men and test communications *before* the platoon arrives.
- (b) When the platoon arrives, the whole area must appear as deserted as it does in war.
- (c) The director explains the narrative to the whole platoon, taking care to avoid reference to such unrealistic terms as "safety precautions", "stop butts", "targets", "range", etc.
- (d) The director gives out orders as company commander and the platoon moves to its assembly position.
- (e) The platoon commander carries out a quick reconnaissance and then gives out his orders (previously rehearsed) to his section commanders, who in turn give out their orders to the men.
- (f) Throughout these preliminaries the area must appear deserted. Supervisors, ammunition issuers, signallers, "effects" men, etc, must all be out of sight. If this is done, a remarkable degree of realism can be achieved.

(g) The exercise proper then takes place.

(h) At the end the director orders the "Cease fire".

(j) The platoon examines its targets for fire effect then a final conference is held at which the supervisors make their comments and the director sums up.

307. A good field firing exercise needs very detailed organization.

308. The criteria of a successful exercise can be summed up as:—

REALISM,

GOOD TRAINING,

GOOD ENTERTAINMENT.

If these three are achieved, the director will have done much towards training his men in peace and thereby saving their lives in war.

SECTION 37—FIELD FIRING BY DAY—SAFETY RULES APPLICABLE TO ALL WEAPONS

309. NO ONE MUST BE IN THE DANGER AREA OF ANY WEAPON UNLESS THEY ARE PROTECTED BY GROUND OR ARE UNDER SUITABLE COVER.

310. Officers conducting exercises should previously make themselves familiar, by personal inspection, with the whole of the firing area and the target area, and ensure that ammunition does not fall outside the danger area. When an exercise is in progress they must always be in possession of a fully detailed map of the range and a copy of the range rules, and the relevant danger area templates (*see* Infantry Training, Volume III, Pamphlet No. 32 (WO Code No. 9486).

311. Before an exercise all troops must be told the pre-arranged signal to be given in the event of an accident or if, for any other reason, it is necessary for all firing to stop immediately. This emergency signal to stop firing will always be based on one or more red flares.

312. A medical orderly, with suitable equipment, and an ambulance, or suitable vehicle in lieu, will always be in attendance during exercises and the medical orderly's location must be known to all officers, NCOs and men taking part.

313. All firing will be controlled by a qualified officer (*see* section 19).

314. There will be no firing if there is any doubt as to the safety of either troops or civilians.

315. No one, other than those detailed to use live ammunition, will carry or use it.

316. Sentries must be posted to prevent persons or livestock from entering the danger area. The position of such sentries will normally be indicated in range orders. If there are no range orders then officers in charge of exercises must carefully plan the position of sentries. They must be given definite orders.

317. Red flags will be flown at the centre of the start line and all other notified points.

318. A trained NCO will act as umpire and safety supervisor to each sub unit. Safety supervisors' duties are:—

- (a) To follow behind each individual section, group or mortar detachment, according to the type of exercise, and to conform exactly to their movement.
- (b) To paint the picture, when necessary, to the men taking part.
- (c) To keep notes of any good or bad points that he sees.
- (d) To prevent any dangerous firing.

319. If fatigue men or markers are in the pits:—

- (a) they must NOT leave the pits without direct orders to do so;
- (b) if such pits are in the danger area, no bombs, grenades or rockets or any other explosive missile may be used;
- (c) each pit must be provided with a four foot by three foot red flag. The flag must be raised before any marker leaves the pit.

SECTION 38—SAFETY RULES—RIFLES, PISTOLS, SMGs AND LMGs

320. Overhead fire is NOT permitted with any of these weapons.

321. Pistols and SMGs will only be fired at targets to the *front* of the troops.

Page 40. Insert new paras 323B, 323C and 323D:—

323B. The use of the No. 80 Smoke(WP) grenade is restricted on all tactical training; the No. 83 grenade will be used in lieu. The No. 80 grenade may only be thrown during training on a grenade range.

323C. Special dispensation to continue using the No. 80 grenade on exercises and demonstrations sponsored by Wings of the School of Infantry is made subject to the following conditions:—

- (a) During exercises they will be thrown by a Directing Staff Officer ONLY.
- (b) During demonstrations they will only be thrown by an officer, on the orders of and under the direct supervision of an officer.

323D. All concerned are to exercise the utmost care to prevent the careless use of grenades No. 80 and to maintain close control over these weapons. No. 80 grenades must not be thrown within 15 yards of plinters from the case. Any type must be marked and destroyed (see chapter 8).

326. *HE bombs* will NOT be used on field firing exercises. This is because the mortar is a hand held weapon and is accordingly dependent entirely on the skill of the firer. The size of the danger area, 250 yards from the point of burst, makes the framing of an exercise difficult and, because of the precautions necessary, most unrealistic.

326A. *Smoke bombs* may be used on field firing or other exercises under the following safeguards:—

Smoke bombs must not be fired at or over troops whether the troops are in the open or under cover. When smoke bombs are fired an area of 50 yards to the front bounded by an arc of 15 degrees on each side of the mortar/target must be clear of all persons and live stock. This 15 degree rule means that mortars must not be aimed at a point nearer to troops, whether in the open or behind cover, than at:—

100 yards	...	...	...	25 yards
200 "	...	...	...	50 "
300 "	...	...	...	75 "
400 "	...	...	...	100 "
500 "	...	...	...	125 "

The above applies to all types of exercises whether on field firing range or elsewhere.

326B. Where smoke is likely to drift across roads, sentries must be posted on each side of the screen to warn traffic.

326C. Fire risks must be considered and normal precautions taken.

326D. *Illuminating bombs*. When illuminating bombs are fired, the predicted point of burst must not be over the heads of troops or other personnel. This is to avoid accidents due to the descending empty canister or a "blind".

Fire risks must be considered and suitable precautions taken. Every effort must be made to find "blinds", they will be destroyed as for smoke bombs (see Chapter 8).

Practice sand-filled bombs. The same precautions as for smoke bombs, less fire risks, will be observed. Special precautions must be taken to ensure that practice bombs fitted with live cartridges are not mixed or returned to the same store as drill bombs.

- (b) A qualified officer or NCO on the mortar.

The ideal is to have a qualified NCO to supervise each mortar, but numbers will seldom permit this arrangement. The qualified NCO should not have to supervise more than two mortars. Similarly the director himself may have to accompany the fire controller.

336. The director will issue safety instructions to all concerned before the exercise starts. These instructions will include:—

(a) Details of charges to be used.

Amdt 4/Mar/1961 ... range allowed in any phase of the exercise.

- (a) Details of charges to be used. Firing will be per ... gres. or limited to Charge I only. No maximum ... resulting from set within the range brackets of either char

(c) Detection of blinds.

337. The duties of the safety staff will be as follows:—

(a) An officer, or NCO, with the fire controller, will ensure that:—

- (i) All safety rules are obeyed.
- (ii) All targets are within the specified field firing area.
- (iii) No troops are in the danger area.
- (iv) The order "Fire" is not given until the officer or NCO in charge of the mortar line has had reports from NCOs in charge of mortars that the mortars are laid correctly and that ammunition has been checked and found correct.

(b) The officer or NCO on the mortar line is responsible for ensuring that:—

- (i) All mortars are correctly laid.
- (ii) All ammunition has been checked.
- (iii) Wet weather precautions, as taught in mortar drill, have been carried out if necessary.

338. No overhead fire will be allowed on field firing.

339. All flanking safety problems will be governed by the 3-inch mortar template.

340. For disposal of blinds see chapter 8.

Demonstrations

341. During demonstrations:—

- (a) Mortars must be fired from a standard medium mortar emplacement if the spectators' stand is within 300 yards of the mortar.
- (b) Spectators will NOT be permitted in the danger area.

Smoke bombs

342. The above rules apply.

pages 42 and 43. Delete paras 343-350 and all dependent para 343:—

Amdt 3/May/1960

43. When firing MMGs during battle and field firing, the danger area will be as shown in the template depicted in para 67, subject to the following additional precautions:

- (a) No target will be engaged at a range less than 1

(e) For each target, and at intervals throughout the shoot, the safety officer or warrant officer, using a detector if necessary will check:—

- (i) That the guns have the required safety margin and that due allowance has been made for wind.
- (ii) That the tripod is correctly mounted and that the elevation gear, jamming handles and outer casing muzzle attachment are firm and secure.

(f) The range gun target will be measured by rangefinder or with the aid of a map of scale not less than 1:25,000.

(g) Armour-piercing ammunition will not be used.

(h) No troops will be allowed to remain in the danger area unless they are in properly constructed bullet proof shelters no will troops enter the danger area or leave shelters within the danger area while firing is in progress.

(j) Overhead fire will not be employed.

(k) Before men are allowed to remain in bullet proof shelters in the danger area, machine gun officers must carefully consider the effect of the steep angle of descent of the bullets at long ranges.

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(c) Equipment

(i) Guns and tripods will be inspected by an armourer to ensure that they are in perfect condition.

(ii) Guns and dial sights will be zeroed.

(iii) Barrels will be gauged by an officer to ensure that there is no entry of the .306 gauge plug.

(b) Ammunition

(i) No ammunition of earlier date than 1945 will be used.

(ii) Ammunition will be inspected by an officer to check that there is no visible deterioration.

(c) Gun line

(i) Tripods will be mounted on T-bases, which will be securely bedded into the ground and staked down.

(ii) Stakes will be hammered into the ground beside each gun barrel to prevent movement of the barrel within the safety angle.

(iii) Direct fire only.

(iv) No tapping is allowed.

(d) The spectators' stand

(i) The spectators' stand will be clearly marked.

(ii) Precautions will be taken to prevent spectators moving outside the stand while firing is in progress.

(iii) The spectators' stand must not be less than 1,000 yards from the gun line.

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(e) Clearing beaten zone area

The area of the beaten zone and the likely area of "shorts" will be cleared, as far as is possible, of hard substances which might cause dangerous ricochets.

(f) Safety angles

- (i) The safety angle of three degrees will be measured by director from the position of the most dangerous gun to the point on the spectators' stand nearest to the line of fire of this gun.
- (ii) A ricochet angle of 90 degrees will then be measured by director from the furthest point of the spectators' stand to the line of fire and a short marker post or figure target will be placed in the ground at this point. No bullet must be allowed to fall short of this post or target.

(g) Registration

- (i) Each gun will be ranged individually on to the target area. At least one belt per gun will be fired on this registration to ensure that the registration is accurate and the ammunition is satisfactory.
- (ii) When registration of a gun has been completed the dial sight bubble will be levelled. This will enable supervising officers and NCOs to check guns for elevation during firing.

(h) Control

- (i) Control points will be established at the spectators' stand and at the gun line and will be manned by officers.
- (ii) These control points will be linked by wireless and telephone and both links will be checked before firing commences.
- (iii) In addition, a danger light signal will be pre-arranged and all firers will be told that they will cease firing and stand clear of their guns on this signal from the spectator's stand.
- (iv) The officer at the control post in the stand will have a signal pistol loaded with the correct cartridge.

(j) During firing

- (i) An experienced NCO will supervise each pair of guns.
He will ensure:—
 - (1) That safety posts against the gun barrels are secure at all times.
 - (2) That dial sight bubbles are level throughout the shoot.
 - (3) That gun numbers re-lay their aims between bursts.
- (ii) The officer at the control point in the spectators' stand will immediately stop the shoot should any round fall short of the ricochet marker post.

SECTION 46—SAFETY RULES—MEDIUM MACHINE GUNS—**SPECIAL DEMONSTRATIONS—OVERHEAD FIRE**

353. Demonstrations of overhead fire may be given subject to approval as in para 352.

354. The following safety rules will apply:—

(a) *Equipment.* See para 352 (a).

(b) *Ammunition.* See para 352 (b).

(c) *Gun line*

- (i) The gun line will be sited to ensure that there is no obstruction above the line of sight gun line—spectators' stand which might deflect bullets before they pass over the spectators' stand.

- (ii) Tripods will be mounted on "T" bases as in para 352 (c).

(d) *Spectators' stand*

- (i) The spectators' stand will be sited immediately behind and against bullet-proof cover at least 10 feet high. The cover may be natural or artificial.

- (ii) Precautions will be taken to prevent spectators moving outside the stand while firing is in progress.

(e) *Safety angle calculations.* To find the minimum quadrant angle which may be employed on the gun to fire over the heads of the spectators:—

- (i) Measure the range gun line—spectators' stand by accurate means.

- (ii) Find the equivalent range for this distance from column 16 of the range tables.

- (iii) Place the equivalent range on the tangent backsight and lay on the highest point of the bullet-proof cover behind the stand.

- (iv) Record this elevation on the dial sight.

- (v) If there is a head wind at the time of firing, add the wind allowance as found from the range tables to the MQA.

(f) *Control.* See para 352 (h).

(g) *During firing.* A qualified and experienced WO or NCO will supervise each pair of guns to ensure that:—

- (i) dial sight bubbles are level throughout the shoot;

- (ii) gun numbers check and re-lay their aim if necessary between bursts.

SECTION 47—SAFETY RULES—FIELD FIRING AT NIGHT

355. The safe conduct of field firing exercises at night calls for careful planning and *additional* safety rules to those already given in previous sections.

356. All night field firing exercises, when the troops concerned have not previously carried out this form of training, will be preceded by a detailed daylight "dry-run" for the directing and safety staffs and the troops. Routes, fire positions, limits of fire, start and stop lines, signals to stop firing and the various lamps will be explained to all by the officer conducting the exercise.

357. When troops are well trained and used to night work, commanding officers are empowered to allow a dry run by the directing and safety staff only.

358. Markers will NOT leave their shelters unless given direct orders to do so.

359. Troops will not fire at targets they cannot see; this normally restricts firing to a range of about 100 yards. In any case targets will not be engaged at ranges beyond 200 except on fixed lines by LMGs and MMGs.

360. Grenades will NOT be thrown or fired except that No. 94 (Energa) practice grenades may be used for tank hunting exercises.

361. Except for support weapons, firing will only take place within an arc of ten degrees to the range axis; the oblique limits of fire will be indicated by white lights on tall posts.

NOTE. This rule is designed to prevent troops going too far forward and being caught in the crossfire of those on their left or right.

362. The start and stop lines and flanks of the firing area must be clearly shown either by natural or artificial features or by lamps.

363. All troops must be told the pre-arranged signal to cease fire, see para 311.

364. Safety supervision with each sub-unit will be by officers, WOs or sergeants. They must be briefed on all safety rules and have a full understanding of all aspects of the exercise.

SECTION 48—SAFETY RULES—

CLOSE-QUARTER BATTLE ON A FIELD FIRING RANGE

365. Close-quarter battle shooting with rifles, pistols and SMGs may be carried out on any battle area or field firing range with a large enough danger area.

366. Normal field firing rules will apply.

367. A NCO will follow close behind each firer to prevent dangerous shooting and careless carriage of arms.

SECTION 49—SAFETY RULES—FIELD FIRING ON INFANTRY TANK CO-OPERATION EXERCISES

General

368. EXERCISES INVOLVING FIELD FIRING ON INFANTRY TANK EXERCISES WILL BE RESTRICTED BY THE RANGE STANDING ORDERS of the range concerned.

369. To ensure maximum control it is recommended that only one arm should fire live ammunition—the other firing blank, eg, tanks fire live, infantry fire blank, or vice versa.

370. It will be borne in mind that a tank has limited vision when closed down and that an added danger exists of tanks running over infantry on the ground.

Danger area templates

371. Application of field firing templates for infantry weapons will be as laid down in the appropriate paragraphs of Infantry Training Pamphlet No. 32 (WO Code No. 9486) and for AFVs the danger areas, etc, will be as laid down in RAC Range Practices, Section 1, Range Instructions 1948 as amended (WO Code 8379).

Control

372. An experienced officer will be nominated to control such exercises. He will be responsible for the safety of all troops taking part in the exercise and for ensuring that all safety rules are obeyed.

373. He will ensure that adequate and alternative means of communication to both infantry and tanks is provided. To assist him in his duties he will co-opt the services of an officer of the other arm concerned. In the case of the RAC he should be the unit gunnery officer.

Reconnaissance.

374. A detailed reconnaissance will be carried out before the exercise takes place. Representatives from infantry and RAC taking part in the exercise will be present and have in their possession the danger area templates of the weapons to be fired.

375. During the reconnaissance:—

- (a) Each stage of the exercise will be carefully examined.
- (b) The correct danger area template will be plotted on the map or trace at each position from which weapons will fire.

- (c) Left and right of arcs for tank fire will then be marked clearly on the ground by the use of flags or easily recognizable markers. When siting these markers care must be taken to ensure that they cater for all fire positions. Normally it is found that the left of arc marker should be placed on the ground on the left of arc bearing taken from the right hand fire position and *vice versa*. Ideally, the markers should be sited at the range of the target area.

376. Directing staff, safety supervisors and all sub-unit commanders taking part will be briefed in detail on the ground in daylight by the officer controlling the exercise. The briefing will include:—

- (a) Full instructions as to the conduct of the exercise.
- (b) Lines of advance and firing positions for both infantry and tanks.
- (c) All other safety measures involved.

377. Sub-unit commanders will brief their troops on the above points.

Rehearsal

378. Whenever possible a non-firing rehearsal of the exercise will be carried out.

Safety officer

379. A safety supervisor, either an officer or NCO, will be with each tank or infantry section.

380. In the case of tanks the safety supervisor may be the tank commander.

381. The duties of the tank safety supervisor are as follows:—

- (a) To ensure that the tank moves only on its correct pre-arranged line of advance.
- (b) To permit it to fire only from its pre-arranged fire positions and at its pre-arranged targets, or within the prescribed arcs of fire.
- (c) To stop the tank firing should its fire appear to be dangerous to troops taking part in the exercise or to markers manning the target.

382. The infantry safety supervisor with each section in addition to normal safety duties on field firing exercises will:—

- (a) ensure no one approaches or lies down within five yards of the front or flanks of a tank except to talk on the tank telephone;
- (b) ensure that troops in concealed positions stand up and indicate their locations by waving when an AFV gets to within ten yards of their position;

- (c) permit movement only on pre-arranged lines of advance;
- (d) permit firing only from the pre-arranged fire position at the pre-arranged targets;
- (e) stop the section or sub-unit firing should it appear to be dangerous to troops taking part in the exercise or to markers manning the targets.

Night exercises

383. LIVE FIRING ON INFANTRY AND TANK CO-OPERATION EXERCISES SHOULD NOT NORMALLY BE PERMITTED AT NIGHT.

AFV weapons—special safety precautions

384. For the purpose of ensuring safety, both the attacking troop or troops of tanks working in intimate co-operation with the leading infantry, and the supporting troop or troops of tanks supporting the infantry by fire from a flank and moving from one bound to another to do so, should each have a separate set of the safety rules enumerated below:—

- (a) *Attacking troop(s)*
 - (i) Tanks will be closed down.
 - (ii) No infantry will be allowed in front of any tank firing.
 - (iii) No tank will engage any target which is outside the prescribed arc of fire.
 - (iv) MGs may be fired on the move.
 - (v) HE and AP natures may be fired, provided infantry do not enter the template area and the tank is stationary when firing.
- (b) *Supporting troop(s)*
 - (i) Tanks may be opened up.
 - (ii) Infantry may be in front of supporting tanks, but firing will cease as soon as infantry approach to within the template area.
 - (iii) Tanks will be stationary when firing.
 - (iv) Guns will be "clear" and red flags flown from each tank before any move is made.

AFV weapons—overhead fire

385. Overhead fire from weapons mounted in AFVs is NOT permitted.

CHAPTER 7

BATTLE INOCULATION

SECTION 50—GENERAL

386. Even when he has mastered weapon training, fieldcraft and minor tactics, a soldier will not be fit to go into battle unless some steps have been taken to accustom him to the noise and atmosphere of the battlefield.

Aim

387. The aim of battle inoculation is to accustom the soldier, by means of demonstrations and exercises, to the noise and atmosphere of the battlefield.

388. Battle inoculation can be introduced during individual fieldcraft training, and in some degree during field firing exercises, but in so doing the aim of field firing exercises should not be lost sight of.

389. Further information on this subject, together with a specimen demonstration, will be found in Infantry Training, Volume I, Pamphlet No. 11 Trained soldiers (All Arms), Exercises in Handling of Weapons, (WO Code No. 8930).

SECTION 51—SAFETY RULES FOR BATTLE INOCULATION**General**

390. Battle inoculation may be carried out on any field firing range or battle area provided local range rules allow it.

391. Officers in charge of battle inoculation must be qualified (*see* section 19). They must satisfy themselves that those detailed to fire weapons are competent to do so and are properly supervised.

392. The rules laid down for field firing in Chapter 6, apply also to battle inoculation with the following *additional* safeguards:—

- (a) All men placed in the danger area of the weapons to be fired or thrown must be protected by bulletproof ground or cover.
- (b) No bullets must be aimed to hit the ground either on or between the weapons and the troops' position.
- (c) All firers must be given precise orders. They will only use weapons which:—
 - (i) they know thoroughly;
 - (ii) have been correctly zeroed and sighted.
 In addition they must be briefed on all movements of troops. They will not fire if they do not know exactly where the troops are.
- (d) Rifles, LMGs on bipods or any other weapons which cannot be clamped on a pre-determined fixed line, will NOT be fired at night.
- (e) LMGs will not be fired in long bursts.
- (f) LMGs putting down flanking fire at night will fire on fixed lines, the danger areas of which (as shown by the templates) are clearly marked and protected by a strand of wire along the whole line of advance. This precaution is to prevent men from walking into the danger area.

(g) A high proportion of tracer will be used as this will serve as an additional check on safety.

(h) Ammunition sentenced for "PRACTICE ONLY" will not be used for battle inoculation.

Amdt 10/Mar/1964

- (i) GPMG/LMG barrels used for battle inoculation must be gauged by the unit armourer in accordance with instructions laid down in current EMERs. The unit armourer is to render a certificate to the effect that this has been done before such barrels are used for this purpose.

14 May 1946.

Overhead fire

393. (a) MMGs. Overhead fire with MMGs will be conducted as laid down in Section 46. They can also be used as in sub-para (b)

(b) LMGs will NOT be used for overhead fire except in the following conditions:—

- (i) Mounted on their tripods.
- (ii) Troops must be protected by bulletproof cover or in a fire trench.
- (iii) The range, gun—troops position, must not exceed 300 yards.
- (iv) Guns will be laid on the troops' position with sights set at the range, gun—troops position **plus** 500 yards. This will ensure that the lowest bullets pass between four and six feet above the cover.
- (v) Ranges will be checked by ranging.
- (vi) Tripods must be securely clamped and sandbagged down.
- (vii) Guns will be fired in short bursts only.

(c) For demonstrations and certain battle inoculation exercises at Tactical Wing, The School of Infantry, overhead fire by LMGs is permitted in the following conditions in addition to those laid down in para 392 ~~to~~ **SUB PARAS (b) to (j)**

- (i) LMGs will be mounted on specially constructed towers or platforms at least 10 feet high.
- (ii) Tripods will be securely clamped and sandbagged down.
- (iii) Precautions will be taken to ensure that, in the event of a tripod leg collapsing during firing, the gun muzzle cannot point downwards.
- (iv) The range to the furthest point over which troops will move will not exceed 500 yards.
- (v) Sights will be set at 500 yards and laid on a suitable target 500 yards away. The gun will be ranged. Sights will then be raised a further 900 yards, relaid on the original target and clamped up as for fixed line firing.

- (vi) At no point on the line of advance will troops be permitted to move above the line of sight.
- (vii) Short bursts only will be fired. Guns will not be allowed to overheat.
- (viii) During firing a constant watch will be kept on the elevating gear and traversing clamp to ensure the gun does not move from its setting.

Flanking and enfilade fire

394. (a) *Rifles and LMGs shoulder controlled.* For troops in the open the relevant field firing danger area template of the weapon or weapons being fired will be used. No troops must be within the danger area. For troops within the danger area as shown by the field firing templates, para 392 (a) will apply.

(b) *LMGs on tripods.* Troops in the open may be as near as eleven degrees to the line of fire, provided:—

- (i) The range, gun—target does not exceed 300 yards.
- (ii) Troops are not allowed to advance beyond a line drawn through the near end of the target at right angles to the line of fire.
- (iii) The gun is laid on a fixed line.
- (iv) The tripod is well clamped and sandbagged down.
- (v) An additional 500 yards is added to the range, gun—target. The range, gun—target will be checked by ranging.
- (vi) Precautions are taken to prevent men entering the eleven-degree danger area.
- (vii) Additional safety will be given if the gun is mounted on ground which is above the troops.

(c) *MMGs.* Will be governed by either section 45 or para 394 (b).

395. Charges

- (a) Explosive charges must not exceed one pound each in weight of explosive. Charges must not be sealed up in containers. (When used as under-water charges, rubber bags are normally used.)
- (b) Gun cotton, TNT or PE only may be used. Ammonal, gunpowder and other powdered explosives should not be used, as they may be spilt and ignited in unexpected ways.
- (c) Charges will not be buried. The risk of flying debris is too unpredictable. The best method to avoid debris is to suspend charges above the ground from a stick leaning towards the men under training.
- (d) When men are concealed in trenches, with their heads below the parapets, the presence of earth and loose stones around the charge is acceptable. The charge, however, must be fixed at parapet level, or below, otherwise there is a danger of damaging men's eardrums.

- (e) In the open, ground must be selected that is free from stones to avoid the danger of flying fragments. Detonators will be inserted in the outside portion of the charge, away from the men under training, to minimise the risk of injury from flying fragments.

Amdt 9/Oct/1963

397. These safety and control requirements apply to battle inoculation: they may be used as a guide for all battle simulation. Safety requirements for set-piece demonstrations should be separately considered by the formation or unit organizing them. Particular attention will be paid to the following details:—

- (a) All practices are to be executed under the personal supervision of an officer. No man is to leave cover or move inside the danger area until the supervising officer gives the order to do so.
- (b) All men taking part in the exercise are to wear steel helmets and eye shields throughout.
- (c) Charges are to be fired electrically; this reduces the chance of anyone getting too near a charge after the instructor has decided to fire it.
- (d) No battery is to be brought within five yards of the firing leads, and no charge is to be fired until everyone is under cover or at the correct safety distance.
- (e) Electric leads must not be jerked once the detonator is in place. Detonators, once inserted, must not be withdrawn from their charge.
- (f) In all practices one of the supervisors is to be detailed to count the explosions. If a misfire is suspected, no one is to approach within 50 yards of the charge concerned until 30 minutes after the time of firing. The supervising officer is then to prepare a charge consisting of a half-round charge with detonator and at least 18 inches of safety fuse. He is to place and fire this against the unfired charge without tempering with the latter in any way.
- (g) In all cases where the area used for detonation of charges is not enclosed by a suitably marked perimeter fence, the details of which must be made known to the troops taking part, the following additional restriction is imposed:—
Charges are to be fired using a service electric detonator. No device is to be used to cause a delayed firing.

398. General safety precautions in handling explosives must be observed. (See Field Engineering and Mine Warfare Pamphlet 3, Chapter 4 (WO Code No. 8776)).

CHAPTER 8

DESTRUCTION OF BLINDS

(See also *Field Engineering and Mine Warfare, Pamphlet 3, Demolitions, Part I, All Arms, 1953, WO Code No. 8776*)

SECTION 52—GENERAL

399. The use of live projectiles such as grenades, mortar bombs and rockets, and of thunderflashes, blank ammunition and similar training expedients, is an essential part of training. When these fail to explode as intended, they may be found and handled by people, including children, who do not know that they are explosives. The Army must do all it can to prevent this happening, and so avoid serious accidents.

400. When a grenade, bomb, rocket or explosive charge is thrown or fired, but fails to explode, it is called a blind. During training, blinds will be found and destroyed as they occur, unless they are lying in a closed target area. If a blind cannot be found...

Page 54. Add new Para 400A:—

Amdt 1/ Oct /1958

400A. Do not throw grenades, etc, or fire weapons (the missiles of which can become blinds), under conditions where the location of blinds is difficult and dangerous, eg, deep snow, waterlogged ground, long rough grass and undergrowth.

402. Unit commanders will order officers in charge of firing to certify in writing that they have either had all blinds destroyed, or have taken the action described in para 401.

403. If the blind is left in a dangerous state and an accident results, there will be a Board of Inquiry (see *Ammunition and Explosive Regulations, Part 5 (WO Code No. 10446), Section 2*). If the evidence discloses negligence, or failure to take reasonable precautions, disciplinary action will be taken.

404. Whenever a blind occurs, the unit will report the fact in accordance with "*Ammunition and Explosive Regulations, Part 5,*" Section 1 and Appendix 6.

405. Disposal of blinds during training will be carried out in accordance with "*Ammunition and Explosive Regulations, Part 3 (WO Code No. 6942),*" Section 5 paras 137-144.

SECTION 53—STORES REQUIRED

406. To destroy a blind, a demolition set is needed; this consists of a length of safety fuze, a detonator, a primer and a 1-lb gun cotton or TNT slab or four 4-oz cartridges of plastic explosive.

407. Whenever troops are going to throw or fire grenades, bombs, rockets, charges, etc, in training, the necessary demolition stores will be taken to the range: they are as following:—

- (a) A demolition box, which can be made in the unit, containing:—
 - (i) A tin of fuze, safety, No. 11.
 - (ii) A cylinder of 1-oz primers.
 - (iii) A rectifier.
 - (iv) A pair of pliers.
 - (v) A ruler or a foot measure marked by inches on the lid of the box.
 - (vi) A knife.
- (b) A separate box of safety matches.
- (c) A separate box of 1-lb gun cotton or TNT slabs or 4-oz "808" cartridges.
- (d) A separate box of detonators, No. 27.

408. For demolition training always use drill detonators, dummy primers and slabs; a drill detonator has a hole through the body; dummy primers and slabs are made of wood.

Safety fuze

409. There are two types of safety fuze that units may receive:—

- (a) *British fuze, safety No. 11, Mark 2.* It is black; it will fit into a detonator, No. 27, as it is; it is packed in sealed tins, two 24-foot coils to a tin. This is the most usual type of safety fuze; use it whenever possible.
- (b) *United States service safety fuze.* It is orange and will fit into a detonator, No. 27, as it is. Do not confuse it with British service instantaneous fuze, which is also orange, but is too thick to fit into a detonator, No. 27, until the outer cover is peeled back. This fuze burns at about a mile a minute. Never use instantaneous fuze for the destruction of blinds.

410. About two feet of safety fuze burn in a minute, or one inch in two and a half seconds. If, however, the fuze has been roughly handled, the gunpowder core may be broken up, and the flash may be instantaneous. To guard against accidents, take these precautions:—

- (a) Keep the tin sealed and in a dry place; although the cover of the fuze is waterproof, damp quickly spoils the gunpowder core.
- (b) Do not cut any fuze off the reel until immediately before it is required for use.
- (c) Do not keep or use odd lengths of fuze.

(d) Immediately before safety fuze is used to ignite any detonator or charge:—

- (i) Cut off and throw away the first ¹²~~six~~ inches.
- (ii) Cut off the next 12 inches, light one end, and see how long it takes to burn through. If it takes more than ~~33~~ or less than ~~27~~ seconds to burn through, destroy the whole coil; it is unfit for use.

FAILURE TO TAKE THIS PRECAUTION WITH EVERY COIL OR REMNANT OF A COIL WILL LEAD TO ACCIDENTS.

Detonators

411. Use detonators, No. 27, for demolition sets. A detonator is a small aluminium tube with a little, very sensitive, high explosive in it. Handle it **CAREFULLY**, do not strike it hard, crush it, bend it, put it near heat, or tamper with it in any way.

412. Detonators are usually unpainted, but are sometimes painted red.

413. They are usually packed in boxes of 25.

414. Damp can spoil them; keep them in their tin with the lid on.

Primers

415. Two types of primers are generally available both being issued in identical packing—10 primers to a tin cylinder and six cylinders in a wooden box. One type is known as the CE primer and the other as the gun cotton (GC) primer.

(a) 1-oz CE primer

This is a tapered cylinder of "composition exploding", protected by a waxed paper covering. This paper is **NOT** removed before use. The primer is designed to fit into the hole in the GC slab, and has a small hole to take the service detonators. Care will be taken when rectifying these primers.

(b) 1-oz gun cotton (GC) primer

This has the same general appearance as the CE primer. It is made of dry gun cotton coated with a waterproof acetone crust. This coating is easily chipped or broken with the result that the explosive may become damp and inert. A rectifier is needed to rectify the detonator hole.

Slabs

416. (a) **1-lb gun cotton slabs.** 14 slabs are packed in a sealed tin, which is in a wooden crate. The slabs are very stable and safe to use, provided that they do not get too dry; when too dry they are flaky and dangerous to use; if they get too wet they become inert and useless.

Keep their tins sealed until they are required for use; even so they are not suitable for use in very hot climates; in very cold weather they may freeze and stick together, and it will be difficult and dangerous to get them out of their tins. They will **NOT** be used when they are dry and flaky or frozen.

(b) **1-lb CE—TNT slabs.** Each slab is sealed in a mill board container, and has two sockets designed to take a special one centimetre primer but the slab may also be initiated by 1-oz gun cotton or CE primer. 14 slabs are packed in a wooden or tin box. They keep well and are not affected by moisture.

(c) **Plastic explosive.** These high explosives are used in 4-oz or 8-oz cartridges wrapped in paper. Five pounds are packed in a cardboard carton and four cartons are packed in a wooden box. These explosives can be used when gun cotton slabs are unsafe to use (*see* para 416 (a)) and TNT slabs are not available.

SECTION 54—MAKING UP A DEMOLITION SET

417. To make up a demolition set:

(a) Test the safety fuze (*see* para 410 (d)).

(b) Cut off enough to give time to walk to cover or out of the danger area between the moment when the fuze is lit and when the set explodes the blind. Cut it cleanly; use a sharp knife on a hard surface. Cut one end square, the other on a slant so as to expose as much of the gunpowder core as possible.

NEVER USE LESS THAN 18 INCHES OF FUZE.

(c) Take a detonator from the tin, and tap it gently on a thumb nail to clear out any dirt. **Do not poke the filling with anything hard.** Push the square-cut end of the fuze gently but firmly as far into the detonator as it will go; push straight; do not screw. Hold the fuze between the third finger and thumb, and crimp it near its open end with a special crimper (*see* Field Engineering and Mine Warfare, Pamphlet No. 3. Demolitions, Part I, (All Arms), 1953, (WO Code No. 8776), Section 3, para 2), or nip it between the blade and handle of a partly opened pocket knife. **Do NOT nip the detonator near its closed end.**

(d) When using safety fuze, it is necessary to take these extra precautions:—

(i) To guard against pushing the fuze down hard on to the explosive in the detonator, measure the distance from the end of the detonator to the explosive with a piece of grass, or stiff paper; mark the distance from the end of the fuze, and insert the fuze only thus far.

(ii) Make certain that the detonator is securely fixed to the fuze, to keep out dust and prevent the fuze coming away from the detonator when in use.

- (e) Take a primer and put the detonator in it. The closed end of the detonator should be about a quarter of an inch short of the far end of the detonator hole; the reason for this is to ensure that the detonator filling is in the centre of the primer. Do NOT allow the detonator to protrude on the far side of the primer or failure may result. If the detonator is loose, wedge it in place with a piece of grass. **DO NOT USE FORCE.**
- (f) Units still sometimes receive Mark 1 primers. A detonator cannot be put into one of these, except by force, until the hole is enlarged with a rectifier (which will be found in the tin of detonators). Push the rectifier in straight; do not twist it in the hole.
- (g) Push the primer into the tapered hole in the slab; use paper or grass to make the primer fit tightly into the hole (see fig 1).

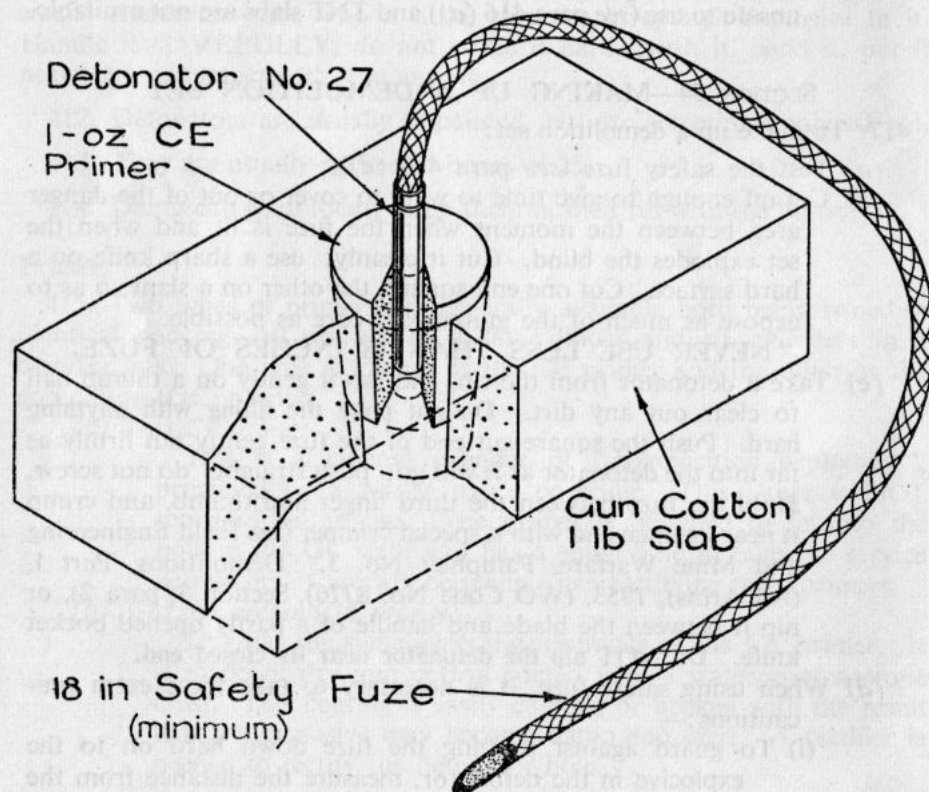


Fig 1.—Demolition set—gun cotton slab

- (h) If no gun cotton that is fit for use is available, eg, when it is frozen, plastic explosive may be used instead. Lash four cartridges with the paper still on them firmly to the primer (see fig 2).

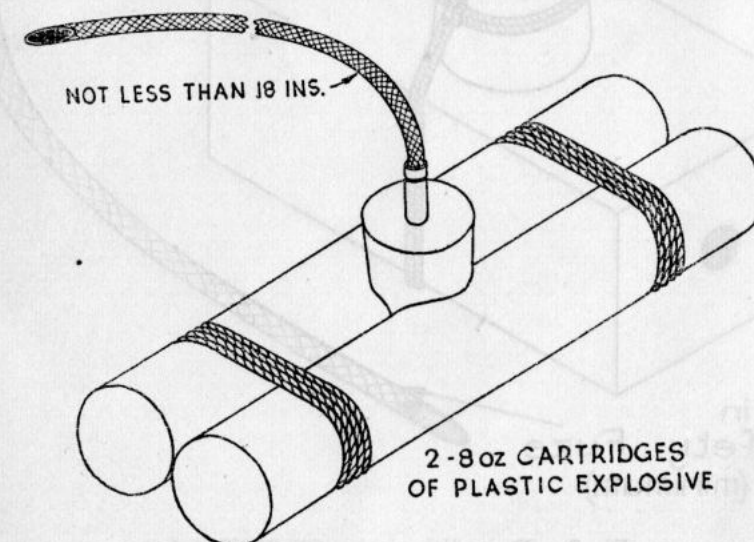
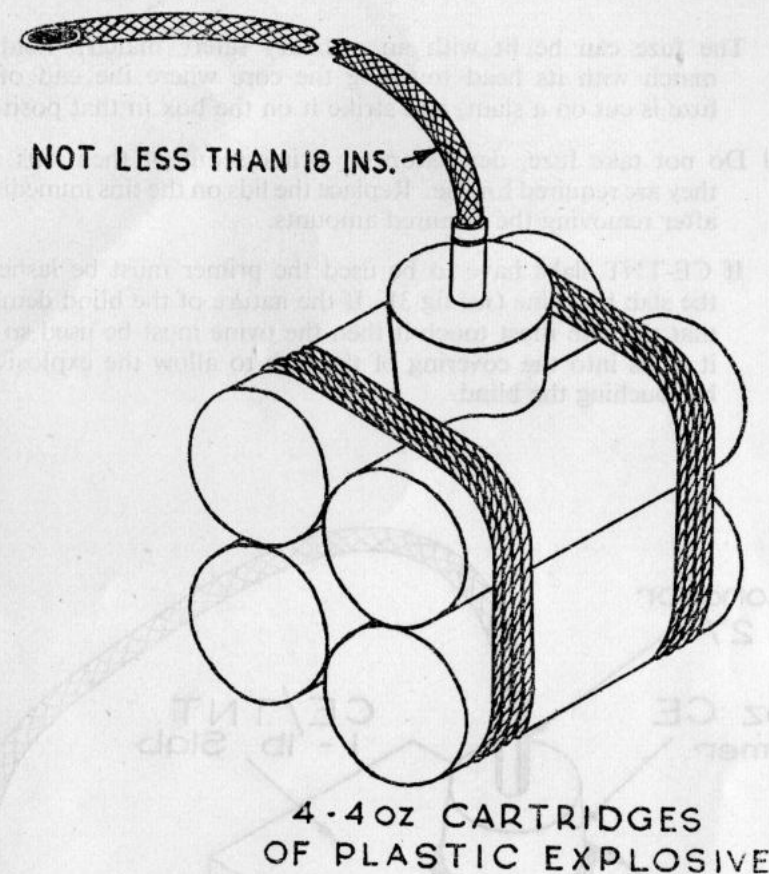


Fig 2.—Demolition set—808 cartridges

- (j) The fuze can be lit with an ordinary safety match; hold the match with its head touching the core where the end of the fuze is cut on a slant, and strike it on the box in that position.
- (k) Do not take fuze, detonators or primers out of their tins until they are required for use. Replace the lids on the tins immediately after removing the required amounts.
- (l) If CE-TNT slabs have to be used the primer must be lashed to the slab by twine (see fig 3). If the nature of the blind demands that the slab must touch it then the twine must be used so that it sinks into the covering of the slab to allow the explosive to be touching the blind.

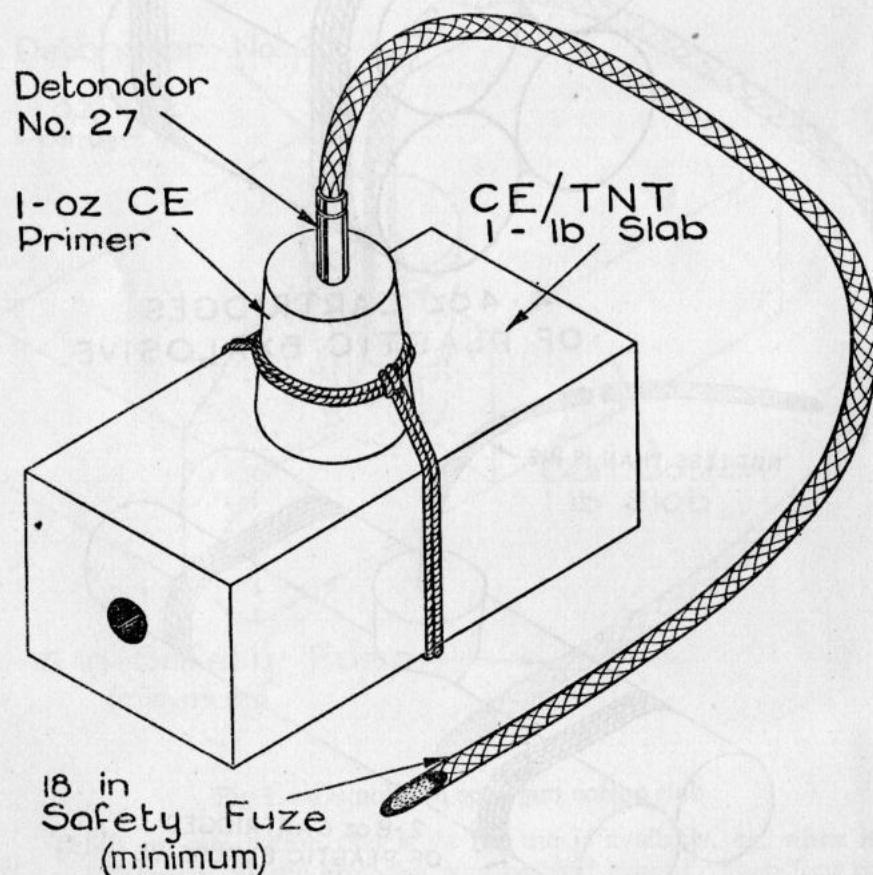


Fig 3.—Demolition set—CE-TNT slab

SECTION 55—HOW TO DESTROY BLINDS

Closed target areas

418. A closed target area is a portion of a range that has a fence round it and notices forbidding entry.

419. Leave all blinds alone if they are lying in a closed target area.

Destruction of blinds—general

420. No one but a qualified officer (see section 19) or an SASC warrant officer may destroy blinds; he will go alone to the blind to place the demolition set and light the fuze. This rule does not apply to those OR of any arm who have received special training in the use of explosives at a War Office school.

421. Everyone else within danger range of the blind will stay under cover until the blind has been destroyed.

422. It often saves time if a blastproof shelter or pit is available near the target area; but sometimes a blind may lie too close for it to be safe to use such a shelter.

423. The officer must fit enough safety fuze to his demolition set to give him time to take cover or to move out of the danger range on his feet at a walking pace.

Danger ranges for various blinds for persons in the open are:—

	Yards
Grenades (except 94 (Energia))	300
2-inch mortar, all types of bombs	250
3-inch mortar, all types of bombs	500
94 (Energia) grenade	150
3.5-inch HEAT or practice (misfired) rocket	300
Demolition set (primer only)	20
Demolition set (primer and 1-lb charge)	100
120-mm BAT round	1,000

424. If a blind lies close to a range boundary, ie, the range boundary is within the danger area as laid down in para 423, action as at (a) or (b) will be taken before it is destroyed:—

- (a) A blast proof wall of bags filled sand or spoil, at least four feet high with a radius of two feet measured internally, must be built round it.
- (b) The action laid down in para 401 must be taken and the IOO informed.

Misfired mortar bombs and rockets will be taken to the required safety distance (see para 423) inside the range danger area for destruction.

425. Never move or disturb a blind (except blinds caused by misfire); anyone near a blind must make sure that neither his steel helmet nor anything else about him can fall off.

426. After the explosion of the demolition set, inspect the area and make sure that the blind has been properly destroyed; if dangerous fragments such as igniter sets and detonators are found, they must be destroyed separately where they lie. If a demolition set does not explode when it should it must not be approached or touched until thirty minutes have elapsed from the time it should have gone off. Then blow it with a fresh demolition set without interfering with either the blind grenade, etc., or the blind demolition set.

Grenade blinds

427. Wait five minutes before approaching a blind grenade.

428. To destroy a grenade (other than an Energa) place the middle of the slab over the centre of the grenade, as close as possible to it, but NOT touching. If the slab cannot be placed over the grenade then lay it on its side with its middle pointing to the grenade centre (see fig 4).

Causes of grenade blinds

429. In most instances it is possible for the officer in charge to deduce the cause of a "blind" from the moment a grenade is thrown. With the 36 grenade, for example, if the mechanism is working correctly the following sequence of events should be noticed:—

- (a) Lever seen flying off.
- (b) Sound of cap being set off by striker.
- (c) Smoke seen coming from the grenade either in the air or on the ground.

A grenade may not explode for the following reasons:—

- (d) Failure of lever—pin not withdrawn or lever jammed.
- (e) Failure of striker mechanism—faulty preparation.
- (f) Fuze not burning—faulty fuze or cap.
- (g) Faulty detonator.

Correct preparation will obviate most of the above faults.

ind mortar bombs (all types) (see fig 5)
Amdt 5/May/1961

destroying 3-inch mortar smoke WP bombs, wait ten minutes after flames have died down before approaching the site of the bomb. If the fuze or burster remains intact, destroy by means of a further charge or a blind bomb. The demolition charge used will be placed in a shallow deep layer of clean damp sand or earth brought from uncontaminated ground. This is to avoid the risk of igniting unburnt phosphorous which have soaked into the ground near the bomb.

middle
bunded

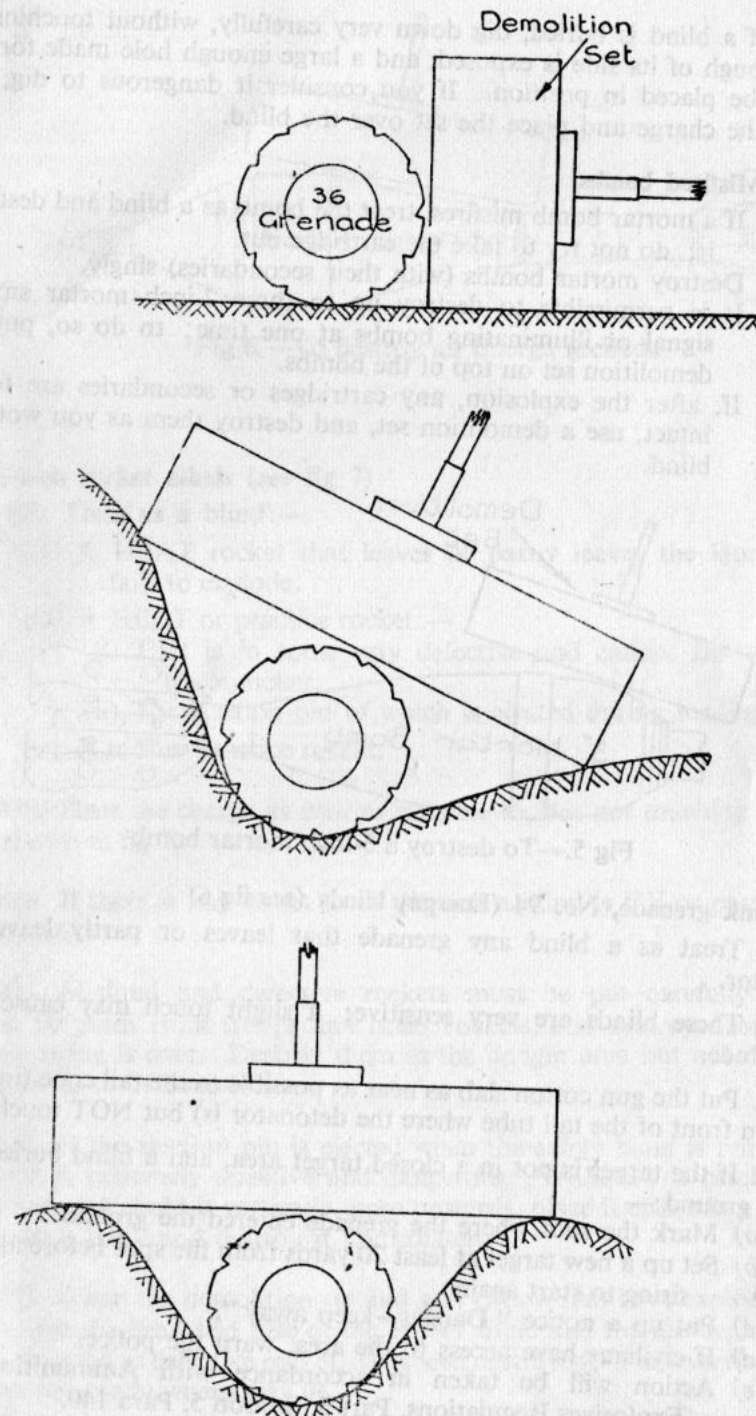


Fig 4—To destroy a 36 grenade

432. If a blind is buried, dig down very carefully, without touching it, until enough of its side is exposed, and a large enough hole made for the slab to be placed in position. If you consider it dangerous to dig, use double the charge and place the set over the blind.

433. Misfired bombs

- (a) If a mortar bomb misfires, treat the bomb as a blind and destroy it; do not try to take the cartridge out.
- (b) Destroy mortar bombs (with their secondaries) singly.
- (c) It is permissible to destroy up to three 2-inch mortar smoke, signal or illuminating bombs at one time; to do so, put the demolition set on top of the bombs.
- (d) If, after the explosion, any cartridges or secondaries are found intact, use a demolition set, and destroy them as you would a blind.

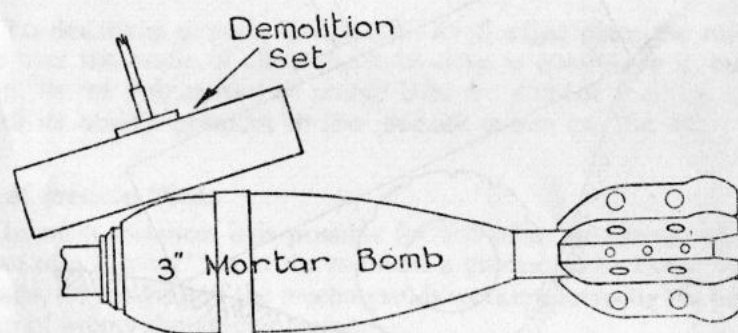


Fig 5.—To destroy a 3-inch mortar bomb

Anti-tank grenade, No. 94 (Energa) blinds (see fig 6)

434. Treat as a blind any grenade that leaves or partly leaves the projector.

435. These blinds are very sensitive; a slight touch may cause them to explode.

436. Put the gun cotton slab as near as possible to the tail cone (immediately in front of the tail tube where the detonator is) but NOT touching it.

437. If the target is not in a closed target area, and a blind buries itself in the ground:—

- (a) Mark the spot where the grenade entered the ground.
- (b) Set up a new target at least 20 yards from the spot before allowing firing to start again.
- (c) Put up a notice "Danger—keep away".
- (d) If civilians have access to the area, warn the police.
- (e) Action will be taken in accordance with Ammunition and Explosives Regulations, Part 3, Section 5, Para 140.



Fig 6.—To destroy an Energa grenade

3.5-inch rocket blinds (see fig 7)

438. Treat as a blind:—

- (a) A HEAT rocket that leaves or partly leaves the launcher, but fails to explode.
- (b) A HEAT or practice rocket:—
 - (i) That is in some way defective and cannot be loaded into the launcher.
 - (ii) The ejection pin of which is ejected during loading.
- (c) A misfire practice rocket.

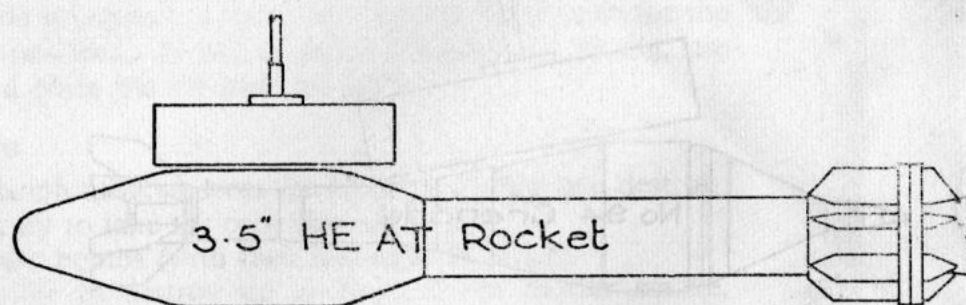
439. Place the charge as near as possible to, but not touching the rocket as shown in fig 7.

440. If there is any doubt as to whether a blind is HE or practice, treat it as HE.

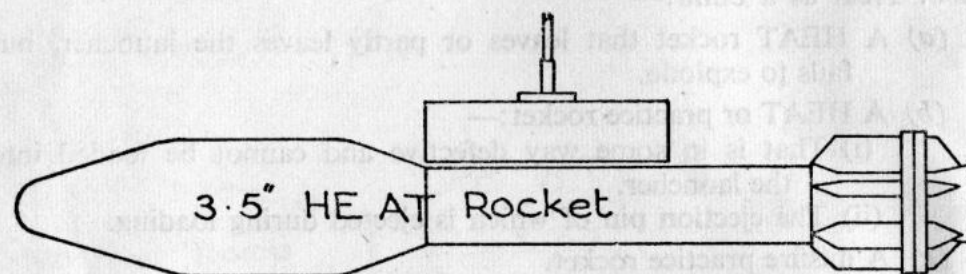
441. Misfired and defective rockets must be put carefully aside, at least 50 yards from troops and other rockets, and destroyed one by one when firing is over. Destroy them in the danger area but not closer than 500 yards to its boundary.

442. If the ejection pin is ejected when the safety band is removed, the rocket is extremely sensitive and dangerous. Withdraw it carefully from the launcher, hold it vertically, nose upwards, place it either in a trench or against a bank and destroy it immediately.

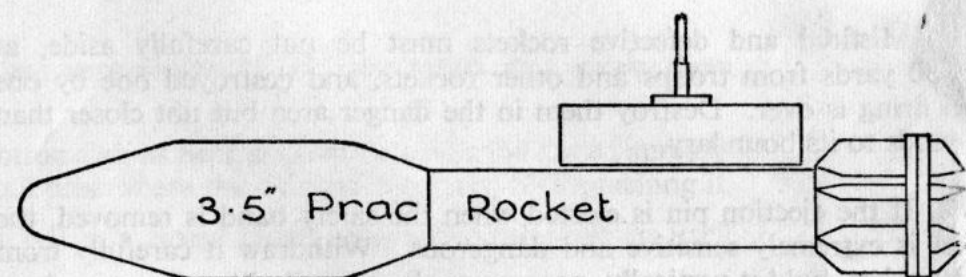
443. When the demolition set and gun cotton slab have exploded, make sure that the head and fuse of the HEAT blind and the motor, in the case of a misfired or defective rocket, have been destroyed; if any survive, destroy them separately where they lie.



Blind



Missfire HE AT



Missfire Practice

Fig 7.—To destroy a 3.5-inch HE rocket

mdt 6/Apr/1962

20mm BAT HESH blinds

444. These will normally be destroyed by a qualified officer or an SASC Warrant Officer but where unusual conditions obtain, the Ammunition Technical Officer will be consulted.

445. All blinds will be destroyed in situ. To restrict fragmentation effects, sandbags filled with sand or earth free from stones will be placed around the blind. Sandbags will be laid in such a way as to ensure that the projectile is not and cannot be disturbed.

446. No person in the open should be allowed to approach within 1000 yards of the point of burst while the blind is being destroyed. As far as the person carrying out the demolition is concerned, this distance may be reduced provided that they are adequately protected in a sandbagged shelter.

447. Either one slab of TNT or two 8-oz sticks of Plastic High Explosive will normally be used to effect the destruction of the blind, together with Composite Explosive primers.

Placing the charge

448. (a) *If the projectile is lying on its side in the open*, the TNT slab should be placed adjacent to the point where the nose cap joins the parallel walls in such a way as to ensure that the projectile is not disturbed. If Plastic High Explosive is used, the sticks should lie side by side, bent to take a primer between them and placed longitudinally in the same position.

(b) *If the rear portion of the projectile only is exposed*, the charge should be as near the nose cap/wall junction as possible, but should be laid in such a way as to ensure that the projectile is not disturbed.

(c) *If only the base is visible*, the charge will be doubled and only Plastic High Explosive will be used. Four sticks of Plastic High Explosive will be moulded together to form a circle of approximately the same diameter as the base of the projectile. A primer will be inserted into the explosive and the charge will be placed round the tracer as near to the base of the projectile as is possible without disturbing it.

APPENDIX A

RIFLE AND LIGHT MACHINE GUN COURSES—
REGULAR ARMY

Aim

1. The aim of individual training in the rifle and LMG is to teach the soldier to become a service shot; to achieve this he must have plenty of practice in firing his weapons. The annual classification course is not, in itself, the complete answer as there is a further requirement for the transitional course and field firing.

The aims of these three forms of service shooting are:—

- (a) *Annual classification course.* To teach the soldier to shoot and to have confidence in his ability to shoot accurately. In addition to this the annual course provides the opportunity to test and maintain or improve the man's technical skill with his weapons and also the opportunity to rate his proficiency.
- (b) *Transitional course.* To introduce the soldier to figure targets (these are not used during the classification courses) and to bridge the gap between the classification range and field firing. This is the first step in adapting the individual's technical skill with the weapon to service conditions.
- (c) *Field firing.* To teach the soldier to shoot in the conditions which he is likely to experience in the field.

These three forms of shooting are complementary. Although only the annual classification course affects the man's pay it is essential that every soldier in those arms affected should fire the transitional course and field firing in addition.

Page 67. At bottom of page *add*:—

Amdt 1/ Oct /1958

Note

New Rifle and LMG courses for the Regular Army have been introduced under authority of WOM 43/Trg/4884 (MT 9) dated 8 May 1958. The new courses as amended from time to time will finally supersede the courses detailed in this pamphlet on 1 April 1959.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

The Rifle Course

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Grouping	4-ft	100	5	1 Lying 2 Recruits: forearm rested 3 Trained soldiers lying in the open	Nil Size of group to be recorded	1 This practice will not count for classification. 2 Each firer will be allowed to examine his groups. 3 As this practice provides a check on zeroing the armourer should be present on the range.
2	Application	4-ft	200	7 2 sighters	1 Lying 2 Recruits: forearm rested 3 Trained soldiers: lying in the open	Bulls 4 Inners 3 Magpies 2 Outers 1 HPS 20	1 Targets to be checked after sighting shots have been fired. 2 All shots to be signalled. 3 Recruits will repeat this practice in respirators during the instructional course, but without sighters. Scores will not count.
3	Snap-shooting	Large snapshooting	200	5	1 Lying in the open 2 Recruits may be in the aim throughout	3 points a hit	1 6 exposures, each of 5 seconds to be given at irregular intervals over

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a total period of 2 minutes. Intervals between exposures to be not less than 10 seconds. The last exposure must be in the last 10 seconds.
2 Hits will be signalled by raising and twisting the target immediately after each exposure.

3 Trained soldiers will not be in the aim before the targets appear, and will come out of the aim and place the rifle on the ground each time the target disappears
4 One round only will be fired at each exposure
5 A trial exposure, without firing, will be given. This will be the first of the 6 exposures shown in range instructions

HPS 15

Target to be exposed for 50 seconds for recruits or 40 seconds for trained soldiers on a signal from the firing point.

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4	Rapid	4-ft	200	10	1 Lying in the open 2 Rifle loaded with 10 rounds, sights adjusted, safety catch forward 3 Firer may be in the aim before the target appears	Bulls and Inners 3 Magpies 2 Outers 1 HPS 30	1 Targets to be checked after sighting shots have been fired. 2 All shots to be signalled.
5	Application	4-ft	300	7 2 sighters 5 to count	1 Standing in a fire trench with forearm rested 2 If a trench is not available the practice will be fired lying in the open with forearm rested	Bulls 4 Inners 3 Magpies 2 Outers 1 HPS 20	Target to be exposed for 50 seconds for recruits or 40 seconds for trained soldiers on a signal from the firing point.
6	Rapid	4-ft	300	10	1 Standing in a fire trench forearm rested 2 If a trench is not available the practice will be fired lying with forearm rested 3 Rifle loaded with 10 rounds, sights adjusted safety catch forward 4 Firer may be in the aim before the target appears	Bulls and Inners 3 Magpies 2 Outers 1 HPS 30	Target to be exposed for 50 seconds for recruits or 40 seconds for trained soldiers on a signal from the firing point.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

The Rifle Course

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7	Application	6-ft	500	7 2 sighters 5 to count	Lying in the open	Bulls 4 Inners 3 Magpies 2 Outers 1	1 Targets to be checked after sighting shots have been fired. 2 All shots to be signalled. 3 To be fired at discretion of CO but will be limited to marksmen, 1st class shots and selected 2nd class shots. Score not to count for classification. 4 In cases where soldiers do not fire practice 7 ammunition will revert to CO's pool.

Total rounds: 51 HPS: Practices 2-6 = 115

Classification standards:— Marksman—103. 1st class—84. 2nd class—72. 3rd class—Below 72.

NOTES

1. The course will be fired twice, first as instructional and then as classification.
2. Practices 2, 3 and 4 and practices 5 and 6 should be fired on the same day and consecutively or else two sighting shots must be allowed from the CO's pool at the start of practices 3, 4 and 6.

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APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

The LMG Course

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Grouping Single rounds and bursts	4-ft	100	15 5 in 1st magazine 10 in 2nd magazine	1 Lying in the open 2 First 5 rounds fired with change lever at "R". Remaining 10 rounds fired in bursts	Nil Size of groups to be recorded	1 When the 5 single rounds have been fired the targets will be changed. The remaining 10 rounds will be fired at the fresh target. 2 Each firer will be allowed to examine his groups. 3 This practice will not count for classification. 4 the armourer should be present on the range.
2	Application Single rounds	4-ft	200	10	Lying in the open	Bulls and Inners 3 Magpies 2 Outers 1 HPS 30	1 All shots to be signalled. 2 Recruits should repeat this practice in respect of instructors during the instructional course, when possible. Scores will not count.

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RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

The Rifle Course

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	Snap-shooting Single rounds	Large snapshooting	200	15	1 Lying in the open 2 Gun loaded, sights adjusted 3 The gun will be in the shoulder throughout the practice. 4 Any number of rounds may be fired at each exposure 5 A trial exposure, without firing, will be given. This will be the first of the 6 exposures shown in range instructions	3 points a hit	1 6 exposures each of 5 seconds to be given at irregular intervals over a total period of 2 minutes. Intervals between exposures to be not less than 10 seconds. The last exposure must be in the last 10 seconds. 2 The target to be exposed in about the same place each time. 3 Hits will be signalled by raising and twisting the target immediately after each exposure.
4	Timed bursts	4-ft	200	20	1 Lying in the open 2 Gun loaded, sights adjusted, change lever at "A" 3 The signal to fire will be the appearance of the target	Bulls and Inners 3 Magpies 2 Outers 1 HPS 45	1 Target to be exposed for 40 seconds for recruits or 20 seconds for trained soldiers on a signal from the firing point. 2 Shots will not be signalled.
5	Timed Single rounds	4-ft	300	22 in 1st magazine 20 in 2nd	1 To be fired from a fire trench 2 If a fire trench is not available then lying in the open	Bulls and Inners 3 Magpies 2 Outers 1 HPS 60	1 The sighting shots will be signalled. 2 Targets will be checked after sighting shots have been fired.

					3 2 rounds will be fired as sighting shots 4 When targets have been checked the gun will be loaded, sights adjusted and the change lever put to "R" 5 The signal to fire will be the appearance of the target	HPS 60	3 Target to be exposed for 40 seconds for recruits or 20 seconds for trained soldiers on a signal from the firing point. 4 Shots will not be signalled.
6	Timed Single rounds	6-ft	400	18 in 1st magazine 15 in 2nd	1 Lying in the open 2 3 rounds will be fired as sighting shots 3 When targets have been checked the gun will be loaded, sights adjusted and change lever put to "R" 4 The signal to fire will be the appearance of the target	Bulls and Inners 3 Magpies 2 Outers 1 HPS 45	1 The sighting shots will be signalled. 2 Targets will be checked after sighting shots have been fired. 3 Target to be exposed for 20 seconds on a signal from the firing point. 4 Shots will not be signalled.

Total rounds: 100 HPS: Practices 2-6=240

Classification standards:— Marksman—200. 1st Class—160. 2nd Class—132. 3rd Class—Below 132.

NOTES

1. The course will be fired twice, first as instructional and then as classification.
2. Practices 2, 3 and 4 should be fired on the same day and consecutively or else two sighting shots must be allowed from the CO's pool at start of practices 3 and 4.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

Transitional Practices for Rifle and LMG

Aim The aim of transitional firing is to practise men in firing at figure targets before being exercised in individual field firing.

Method

All recruits and trained soldiers should, as soon as possible after firing the rifle and LMG courses, fire transitional practices on the lines of those given below and thereafter once a year. The practices given are a guide only and must be adapted to the range, time available and to the theatre in which the unit is serving or training to serve. Those shown can be fired on a normal classification range. It is essential, whatever practices are devised, that they are simple and that the aim given above is kept in mind. All recruits will require careful coaching.

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Rifle application	Fig 12	100	5	Lying in the open	Nil	Position of hits to be pointed out.
2	Rifle Snap-shooting	Fig 12	100	5	1 Lying in the open 2 Sights adjusted, rifle on the ground. The rifle to be placed on the ground after each exposure 3 1 round only will be fired at each exposure	HPS 5	1 5 exposures each of 5 seconds to be given at irregular intervals over a period of 2 minutes. Intervals to be not less than 10 seconds. The last exposure must be in the last 10 seconds. 2 Targets should appear in exactly the same place each time. The aim should be to force the firer to alter his direction of aim for each shot. As a guide it is sufficient for the target to appear anywhere on an 8-ft frontage. This is within the limits of the normal target frames on the classification range. 3 Hits will be signalled by raising and twisting the target immediately after each exposure.

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No.	Rifle application	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	Rifle application	No. 13	200	5	Lying in the open	Nil	Position of hits to be pointed out.
4	Rifle Snap-shooting	No. 11	200	5	1 Lying in the open 2 Sights adjusted, rifle on the ground. The rifle to be placed on the ground after each exposure 3 1 round only will be fired at each exposure	1 point a hit	1 5 exposures each of 5 seconds to be given at irregular intervals over a period of 2 minutes. Intervals to be not less than 10 seconds. The last exposure must be in the last 10 seconds. 2 Targets should appear in exactly the same place each time. The aim should be to force the firer to alter his direction of aim for each shot. As a guide it is sufficient for the target to appear anywhere on an 8-foot frontage. This is within the limits of the normal target frames on the classification range 3 Hits will be signalled by raising and twisting the target immediately after each exposure.
5	Rifle Fire with movement	No. 11 No. 13	300 to 50	15	1 Standing in a fire trench at 300 yards, rifle loaded, sights adjusted. On appearance of Fig 11 target fire 5 rounds 2 When Fig 13 target appears run to 200 yards and fire 5 rounds lying down	HPS 5 1 point a hit	1 Fig 11 target to be exposed for 20 seconds on signal from firing point. No signalling. 2 Fig 13 target to be exposed for one minute on a signal from firing point. No signalling.

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Transitional Practices for Rifle and LMG

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					<p>3 Advance at the walk and fire one round at each exposure of a Fig 11 target</p> <p>4 The range at which targets will be exposed should vary between 175 and 50 yards. The firer's position should be standing, kneeling or sitting, according to the ground. Rifles to be carried at the high port position. Safety catches to be applied before movement</p>		3 Fig 11 target to be exposed for 5 seconds on each signal from the firing point. Hits will be signalled by raising and twisting the target immediately after each exposure.
6	LMG Application Single rounds	Fig 13	200	5	Lying in the open	Nil	Position of hits to be pointed out.
7	LMG Snap-shooting	Fig 11	200	10	<p>1 Lying in the open</p> <p>2 Gun loaded, sights adjusted</p> <p>3 Butt to be replaced on the ground each time the target disappears</p> <p>4 2 rounds only will be fired at each exposure</p>	1 point a hit	<p>1 5 exposures each of 5 seconds to be given at irregular intervals over a period of 2 minutes. Intervals between exposures to be not less than 10 seconds. The last exposure must be in the last 10 seconds.</p>

- 2 Targets should not appear in exactly the same place each time. The aim should be to force the firer to alter his direction of aim for each shot. As a guide it is sufficient for the target to appear anywhere on an 8-foot frontage. This is within the limits of the normal target frames on the classification range.
- 3 Hits will be signalled by raising and twisting the target immediately after each exposure.

8	LMG Fire with Movement	Fig 11 Fig 13	300 to 200	20	<p>1 Lying in the open</p> <p>2 Gun loaded with magazine of 5 rounds, sights adjusted, magazine of 15 rounds in the pouch</p> <p>3 When Fig 11 target appears fire 5 single rounds in 10 seconds</p> <p>4 When Fig 13 target appears run to 200 yards and fire 15 rounds</p> <p>5 Gun will be made "safe" before movement</p>	<p>1 point a hit</p> <p>HPS 20</p>	<p>1 Fig 11 target to be exposed for 10 seconds on signal from the firing point.</p> <p>2 Fig 13 target to be exposed for 1 minute, 15 seconds after lowering Fig 11 target.</p> <p>3 No signalling.</p>
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Total rounds: 70 HPS: Practices 2, 4, 5, 7, 8=55

Pass standard: 30 points.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

Small Bore (Miniature) Rifle Course

Further practices, particularly grouping, should be fired if ammunition is available.

Serial	Practice	Target	Range in yards	Rounds	Detail	Average scores as a guide only		
						HPS	1st class	2nd class
A	Grouping	Small (representative 200)	25	5	Lying with forearm rested	25 (One inch group)	20 (Two inch group)	15 (Three inch group)
B	Application	Small (representative 200)	25	5	Lying with forearm rested	20	15	11
C	Application	Repeat of serial B	25	5	Lying in the open	20	14	10
D	Application Snap-shooting	Large snap (representative 200)	25	5	Lying with forearms rested, 5 seconds' exposure each. Rifle in aim before target appears.	15	12	9
TOTAL						80	61	45

On ranges which are only 20 yards long representative 200/20 yards targets should be used.

When scoring the grouping practice fired at 20 yards the size of the groups should be reduced to four fifths, ie, 0.8, 1.6 and 2.4 inches instead of 1, 2 and 3 inches respectively.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—

REGULAR ARMY

ANNEXURE I

Infantry Special Instructions

Recruits

1. All infantry recruits will fire practices as follows:—

	Rifle	LMG
Instructional	Practices 1-6	Practices 1-6
Classification	Practices 1-6	Practices 1-6

- NOTES 1 During instructional practices ammunition from CO's pool will be used for repetition as necessary.
- 2 When classifying, practice 1 will be fired with both rifle and LMG but will NOT count for scoring.
- 3 Ammunition from CO's pool not required for repetition will be used where possible for transitional practices.

2. Ammunition allotment

Allotted for rifle practices	88
Allotted for LMG practices	200
CO's pool	57
	<hr/> 345

3. Gas practices

All recruits will repeat practice 2 application in respirators at 200 yards. An additional 5 rounds of ammunition will be allowed for this.

Trained soldiers

4. All trained infantry soldiers will fire practices as follows:—

	Rifle	LMG
Instructional	Practices 1-6	Practices 1-6
Classification	Practices 1-6	Practices 1-6

- NOTES 1 During instructional practices ammunition from CO's pool will be used for repetitions as necessary.
- 2 Practice 1 on both rifle and LMG will be fired at beginning of classification but scoring will count on practices 2-6 only.
- 3 Practice 7 will be fired at discretion of CO. It will be limited to marksmen, 1st class shots and selected 2nd class shots. In cases where soldiers do not fire rifle practice 7 ammunition will revert to CO's pool.
- 4 Ammunition from CO's pool which is not used for repetition during instructional practices will be used for the transitional course.

5. Ammunition allotment

Allotted for rifle practices	102
Allotted for LMG practices	200
CO's pool	200
	<hr/>
	502

6. Regimental boys

Boys will not fire .303 until they are 15½ years old and then only after adequate training. Ammunition is allotted as follows:—

1st year	Instructional rifle and LMG)	255 rounds
2nd year	Instructional and classification (rifle and LMG)	502 rounds

RIFLE AND LIGHT MACHINE GUN COURSES—

REGULAR ARMY

ANNEXURE 2

Special Instructions Other Arms and Services

Contents

1. This annexure contains the special instructions for other arms and services.

Ammunition

2. Details of ammunition is at annexure 3. The purpose of these pools is to provide extra ammunition for:—

- Repetition, where necessary, during instructional practices.
- Firing such of the other practices laid down in appendixes B and C of this range course as may be considered suitable by the CO.
- Firing selected transitional practices from those laid down in the transitional course.

Note that in the case of recruits, CO's pools will be used for repetition only.

Regimental boys

3. Regimental boys of other arms/services will not fire .303 until they are 15½ years old and then only after adequate training. Annual allotment of ammunition per boy is 35 rounds; it will be used to fire an instructional recruits course practices 1-3) with repetition as necessary.

Recruits arms and services other than infantry

4. *Rifle.* All recruits of arms/services other than infantry will fire the following rifle course before completion of recruit training:—

Instructional	Practices 1-3
Classification	Practices 1-3 to be recorded but not to count for pay

NOTES 1 Practice 1 grouping in both instructional and classification will be recorded as:—

4-inch group
8-inch group
12-inch group
12-inch and 1 wide

No points are allotted for groups and this practice will not count for scoring.

2 For purposes of recording in classification practices scoring will be as follows on practices 2 and 3 only:—

HPS practices 2 and 3	35
1st class	26
2nd class	21
3rd class	Below 21

5. *Gas.* Where practicable recruits will fire an additional practice 2 in respirators while at their ABTUs. In cases where this is impossible an additional practice 2 will be fired in respirators the first time the recruit fires an annual range course after leaving his ABTU.

6. *Ammunition.* Allotment is as follows:—

Instructional practices	17
Classification practices	17
CO's pool	46
	<hr/>
Total	80

Note that an additional five rounds is allowed for recruits who fire gas practice while at their ABTUs.

7. *LMG.* With the exception of RA, R Sigs, Infantry, Int Corps, RASC, RAPC and RPC, recruits of all arms/services will fire the following LMG course before completion of recruit training:—

Instructional	Practices 1-4
Classification	Practices 2-4 to be recorded but not to count for pay

NOTE. For purposes of recording in classification practices scoring will be as follows on practices 2-4 only:—

HPS practices	135
1st class	90
2nd class	74
3rd class	Below 74

8. RA, R Sigs, Int Corps, RASC, RAPC and RPC do not fire recruits LMG course while at ABTUs. Ammunition allotted will be used during their first year's training on reaching their units; where all personnel of the above arms/services do not fire the LMG, the recruit LMG ammunition allotment will only be available for first year soldiers detailed to fire the BREN in accordance with personnel in arms and services listed in para 14.

9. *Ammunition.* Allotment is as follows:—

Instructional practices	1-4	60
Classification practices	2-4	45
Co's pool		70

Total 175

Trained soldiers, arms and services, other than infantry

10. Rifle

All trained soldiers of arms and services with the exception of RA, RE, APTC and RAEC will fire the following rifle course annually:—

Instructional practices 1-4

Classification practices 1-4 but practice 1 NOT to count for scoring.

NOTES

1 Scoring for classification purposes on practices 2-4 will be as follows:—

HPS	65
Marksman	56
1st class	48
2nd class	39
3rd class	Below 39

2 In cases where soldiers have not fired a gas practice while at their ABTUs they will repeat practice 2 in respirators the first time that they fire an annual course after joining their units.

3 Personnel of REME, RAPC and ACC will classify on the rifle course as laid down in para 10. If they are attached to units of other arms they may, at the discretion of CO, fire complete course applicable to the arms to which they are attached; for classification purposes scoring will still be based on practices 2-4.

11. RA and RE

All trained soldiers of the RA and RE will fire the following rifle courses annually:—

Instructional
Classification

Practices 1-6

Practices 1, 2, 3, 5 and 6 but practice 1 will not count for scoring.

NOTES

1 Scoring for classification purposes on practices 2, 3, 5 and 6 will be as follows:—

HPS	85
Marksman	73
1st class	63
2nd class	51
3rd class	Below 51

2 In cases where soldiers have not fired a gas practice while at their ABTUs they will repeat practice 2 in respirators the first time that they fire an annual course after joining their units.

12. APTC and RAEC

APTC and RAEC personnel will fire the annual rifle course applicable to the arm/service to which they are attached. Where RAEC personnel are attached to an RAEC establishment they will fire the annual rifle course detailed in para 10.

13. Ammunition

For detailed allotments see annexure 3.

14. LMG

Details of personnel in arms and services who fire an annual LMG course are as follows:—

RAC	All subalterns, all assault troopers and two men per vehicle having LMG as armament.
RA	All subalterns and six men per LMG on establishment.
RE	All subalterns and six men per LMG on establishment.
RASC	50% of personnel in units except that in airborne RASC 100% fire.
RAOC	(a) All subalterns, regular OR and NON-tradesmen. (b) 5% of all personnel in base installations in addition to (a). (c) 25% of all personnel in units other than base installations.

R Sigs, REME
RMP, MPSC
RPC, Int Corps
RAVC, APTC
RAEC

25% of officers and 6 other ranks per LMG
on establishment.

All personnel.

15. RAC, RA, RASC, RAOC, REME, RMP, MPSC and RPC

Personnel as detailed in para 10 above will fire the following LMG course annually:—

Instructional	Practices 1-5	
Classification	Practices 2-5	
Scoring	HPS	195
	Marksman	165
	1st class	130
	2nd class	107
	3rd class	Below 107

16. R Sigs and Int Corps

Personnel as detailed in para 10 will fire practices 1-5 combined instructional and classification course annually. Scoring will be based on practices 2-5 and will be as laid down in para 11.

17. RE

Instructional	Practices 1-6	
Classification	Practices 2-6	
Scoring	HPS	240
	Marksman	200
	1st class	160
	2nd class	132
	3rd class	Below 132

18. APTC and RAEC

APTC and RAEC personnel will fire the annual LMG course applicable to the arm/service to which attached. Where RAEC personnel are attached to an RAEC establishment they will fire the annual LMG course detailed in para 15.

19. RAPC and ACC

Personnel of RAPC and ACC do not fire an annual LMG course.

20. Ammunition

For detailed allotment see annexure 3.

APPENDIX A—continued

RIFLE AND LIGHT MACHINE GUN COURSES—REGULAR ARMY

ANNEXURE 3

Other Arms and Services—Ammunition Allotment

Serial	Corps or Service	Type of soldier	Rifle			LMG			Total Annual course
			Practice	Pool	Total	Practice	Pool	Total	
1	All excluding Inf	Recruits	34	46	80	105	70	175	255
2	RAC	Assault troopers	54	136	190	149	163	312	502
		1st year armed with rifle	54	106	160	—	—	—	160
		1st year not armed with rifle	54	96	150	149	133	282	432
		2nd year armed with rifle	54	101	155	—	—	—	155
		2nd year not armed with rifle	54	91	145	149	133	282	427
3	RA	All	88	72	160	149	100	249	409
4	RE	All	78	82	160	185	92	272	432
5	R Sigs, Int Corps	1st year	54	86	140	82	63	145	285
		2nd year	54	101	155	82	63	145	300

APPENDIX A--continued

RIFLE AND LIGHT MACHINE GUN COURSES--REGULAR ARMY

ANNEXURE 3

Other Arms and Services--Ammunition Allotment

Serial	Corps or Service	Type of soldier	Rifle			LMG			Total Annual course
			Practice	Pool	Total	Practice	Pool	Total	
6	RASC, RAOC, REME, RPC, ACC	1st year	54	86	140	149	108	257	397
		2nd year	54	101	155	149	108	257	412
7	APTC, RAEC	Ammunition allotment for rifle and LMG courses as for Arm or Service to which they are attached.							
8	RAPC	1st year	54	86	140	—	—	—	140
		2nd year	54	101	155	—	—	—	155
9	RAVC	1st year	54	86	140	82	78	160	300
		2nd year	54	101	155	82	78	160	315
10	RMP & MPSC	1st year	54	86	140	149	108	257	397
		2nd year	54	101	155	149	108	257	412

NOTES

1. Although the term 1st year soldiers has been abolished, it is included in this annexure to avoid alteration to ammunition scales.
2. In cases where soldiers fire an additional practice 2 rifle in respirators while at ABTUs, scale for first year soldiers will be decreased by 5 rounds. ABTUs can claim the extra 5 rounds for all recruits who fire a gas practice.
3. Serials 1 and 6. There is no allotment for the LMG to ACC.

APPENDIX B

MEDIUM MACHINE GUN COURSES--REGULAR ARMY

(Ammunition allotment is 905 rounds, Mark 8z, per capita, per annum, for six men each MMG)

The MMG Course--Part I (To be Fired on the 25 Yards Range)

The practices in part I should be fired practice by practice as the appropriate stage of training is reached

No.	Practice	Target	Rounds	Detail	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1	Service bursts	Stop butts	50	Aim:—To give the firer experience in firing service bursts. Rounds will be spaced in two groups of 25 rounds. This practice will be fired on conclusion of the 25-yards range characteristics demonstration. The instructor will load and aim the gun at a point on the stop butts	It should be explained that this is the normal burst on service, though such bursts are not fired during part I.
2(a)	Application of service bursts	Three coloured plates	75	Aim:—To give the firer further practice in the application of service bursts, also to give him confidence in himself and the weapon. Rounds will be spaced in three groups of 25 rounds. Gun will be loaded and sights set at the required elevation to hit the target. The order "Fire" will be given. The firer will fire a service burst at each target	This practice should be carried out as soon as the firer has received practice in Lessons 35 and 52 of Infantry Training, Volume II, Infantry Heavy Weapons (Pamphlet No. 24, Medium Machine Gun, Part I (WO Code No. 8667), Lesson 35 and Part II (WO Code No. 8685), Lesson 52).
2(b)	Application of service bursts	Landscape target (see Inf Tr, Vol I, Pam No. 12, (WO Code No. 8419) Appendix A)	75	Harmonization of sights will be carried out before this practice begins. Rounds will be spaced in three groups of 25 rounds. Three targets will be indicated to the firer. The gun will be loaded and sights set at the harmonized range. The firer will fire a service burst at each target.	

APPENDIX B—continued

MEDIUM MACHINE GUN COURSES—REGULAR ARMY

(Ammunition allotment is 905 rounds, Mark 8z, per capita, per annum, for six men each MMG)

No.	Practice	Target	Rounds	Detail	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
3	Traversing	Horizontal and oblique lines on a white screen	100	<p>Aim:—To practice the firer in the regulation tap for traversing a horizontal and an oblique target</p> <p>(i) Single shots will be fired</p> <p>(ii) The firer is ordered to traverse from one end of the line, the order "Stop" being given after 5 rounds have been fired. He is then ordered to traverse from the other end</p> <p>(iii) The procedure is carried out first on the horizontal and then on the oblique lines</p>	<p>(i) <i>Single shot load.</i> Before this practice is fired, men must be taught how to "single shot load". To do this the gun is half loaded and the crank handle then pulled back and released but the belt is not pulled. The gun will then fire one shot when the thumbpiece is pressed. To reload, the crank handle is pulled back and released, the belt not being pulled. The firer will test his clamp before the practice.</p> <p>(ii) The shots should be 4 inches apart laterally.</p>
4	Indirect fire practice	White screen with aiming mark	15	<p>Aim:—To practise the firer using the dial sight. Rounds to be spaced in three groups of five rounds. The aiming post is put out and the dial sight fixed to the gun. The firer will be ordered to lay, using the tangent sight, on the aiming mark. When the range is clear, the order "Load" will be given. The range drum will be set at 400 yards and the bubble levelled by means of the angle of sight drum. The lensatic sight will be aligned on the aiming lamp. The order "Fire" will be given. The gun will be knocked off its alignment by the instructor as each stoppage occurs</p>	<p>After each correction has been applied the instructor will check the aim before allowing the practice to continue.</p>

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5(a)	Immediate action (Day)	White screen with aiming mark	20	<p>Aim:—To practise immediate action by day. The belt will be prepared beforehand with a series of stoppages. The gun will be mounted, loaded, and laid on the aiming mark. The order "Fire" will be given</p> <p>The gun will be knocked off its alignment by the instructor as each stoppage occurs</p>	<p>Accuracy in relaying will be judged from the size of the complete group.</p>
5(b)	Immediate action (Night)	Plain white screen	20	<p>Aim:—To practise immediate action by night. The belt will be prepared beforehand with a series of stoppages. The gun will be mounted, dial sight fixed and aiming lamp placed out. The gun will be laid, using the tangent sight, on the centre of the screen which will be illuminated by a lamp. The aim is checked by the instructor and the tangent sight lowered. The range drum on the dial sight will be set at 400 yards and the bubble levelled by means of the angle of sight drum. The lensatic sight will then be aligned on the aiming post. The orders "Load" and "Fire" will be given. After firing the first group the firer will be given a switch of not less than 20 minutes and not more than 1 degree 30 minutes, in multiples of ten minutes, right or left, before being given the order to fire the second group. Before firing the final group the firer will be given, in addition to a switch as for second group, a range correction of 400 yards. The bubble must be levelled by means of the elevating wheel before firing this group</p>	<p>Accuracy in relaying will be judged from the size of the complete group. This practice must be fired in darkness. The MPI of the second group should be displaced four inches each 15 minutes of switch, right or left of the first group. The MPI of the final group should be displaced from the second as above, and approximately eight inches above or below.</p>

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Total rounds: 355

MEDIUM MACHINE GUN COURSES—REGULAR ARMY

(Ammunition allotment is 905 rounds, Mark 8z, per capita, per annum, for six men each MMG)

The MMG Course—Part II (To be Fired on Open Range at 600 Yards)

No.	Practice	Target	Rounds	Detail	Remarks
(1)	(2)	(3)	(4)	(5)	(5)
6	Registration	Prepared patch on stop butts	75	Aim:—To register the correct range and wind allowance before applying fire. Rounds will be spaced in groups of 25. The gun will be mounted and loaded. On the order being given for the practice to begin, the firer will engage the patch and register the range and wind allowance necessary to hit the centre of it.	If observation of strike is difficult, the position of the MPI of each burst, with reference to the centre of the patch, will be signalled from the butts on a 4-foot target hoisted for this purpose.
7	Obscuration of target	4-ft	25 (To be fired in one burst)	Aim:—To test the man in engaging a target using an aiming mark. The gun will be mounted and loaded. The target will be indicated to the firer. The range and order "Lay" will be given and the firer will set the sights and lay at the aiming mark. The order "Pick up aiming mark" will be given, whereupon the firer will act in accordance with the procedure given in Infantry Trainings, Volume II, Infantry Heavy Weapons, Pamphlet No. 24—Medium Machine Gun, Part II (WO Code No. 8685), Lesson 72. The gun will be tapped off slightly and the elevating wheel turned by the supervising NCO. On the command "Fire" the firer will engage the target with the aid of the gun aiming mark. Time allowed 35 seconds	

8	Tapping right and left	Coloured screen	125	Aim:—To test the practical application of fire on a target of little width. Rounds will not be spaced, but bursts of 25 rounds will be fired. The gun will be mounted and loaded, but not laid on the screen. On the order "Fire" the firer will engage the target by tapping right and left one tap. He will fire five bursts and may check his aim and, if necessary, re-lay twice only, immediately before the third and fifth bursts.	
9	Service application	4-ft	75	Aim:—To test the firer in mounting his gun in the lowest service position and engaging a fleeing target. Gun and tripod will be laid on the ground about three paces in rear of the spot on which the gun is mounted. Tripod on the left of the gun, legs to the rear, rear leg set for sitting position. Sights at zero. Ammunition liner and condenser can well be in a convenient position on the firing point. The position at which the firer's target will appear will be indicated to him. On a signal from the firing point the target will be hoisted. The exposure will be timed from the butts. As soon as the target appears the gun will be brought into action in the lowest service position and fire opened on that target without further word of command. Time allowed 150 seconds.	
Total rounds 300					

NOTES

- The practices of this part will be fired consecutively.
- Although no form of scoring is shown, in practices 7, 8, and 9 the firer should be told how many hits he has obtained on the target.

APPENDIX B—continued**MEDIUM MACHINE GUN COURSES—REGULAR ARMY**

(Ammunition allotment is 905 rounds, Mark 8z, per capita, per annum, for six men each MMG)

The MMG Course—Parts III and IV (Fire Control and Tactical Exercises with Ammunition)**General**

1. If time and ammunition are available, parts III and IV of the medium machine gun course should be fired.

2. Field firing ranges will always be scarce, and it is essential that the time spent upon them is not wasted. Very careful previous reconnaissance by the commanders concerned is therefore necessary.

3. Dress. Battle order will be worn by all ranks taking part in parts III and IV.

PART III**Aim**

4. The aim of this part is:—

- (a) to practise fire unit commanders and their understudies in obtaining fire effect rapidly, by direct and indirect means, by day and by night, and in making corrections from observation of strike;
- (b) to exercise NCOs and men in section and platoon drill, fire discipline, and the maintenance of the guns in action;
- (c) to practise rangetakers in taking ranges and in observation of fire;
- (d) to cultivate team work in the fire units;
- (e) if time and ammunition allow, to stage demonstrations of fire control, beaten zones, etc.

General method of conducting

5. In sub-allotting the available ammunition, consideration will be given to the following:—

- (a) The machine gun is primarily a direct fire weapon. Therefore the bulk of the ammunition will be allotted to direct fire exercises.
- (b) A high average standard of efficiency is to be aimed at, and not the training of a few experts. Consequently every potential fire unit commander should be exercised, and the personnel performing Nos. 1 and 2 at the guns frequently changed over.
- (c) The ammunition available may not be sufficient for the platoon to carry out all the methods of indirect fire. When firing indirect it may be necessary, owing to shortage of ammunition, to fire with the two flank guns of a platoon, though the whole of the drill should be carried out by the centre guns.

- (d) The value to be obtained from the exercise is greatly increased if the fire controller is able to observe the strike of the bullets. Observer and tracer ammunition, when available, are a useful guide as to whether or not fire effect has been obtained.
- (e) Continued repetition of part III exercises will not produce results in proportion to the expenditure of ammunition, especially in conditions where observation of strike is not possible. Once the NCOs and men have been exercised in fire control and fire discipline in accordance with these notes, further ammunition available for part III is best expended in exercises on a competition basis.
- (f) Demonstrations in methods of fire control, trajectories, beaten zones, safety limits, etc, are a valuable means of teaching the characteristics of the weapon. Such demonstrations require a proportion of tracer ammunition. If tracer ammunition is scarce, priority should be given to fire control exercises and not to demonstrations.
- (g) Every effort will be made to produce conditions resembling as far as possible those of active service. Where departure from service positions is unavoidable the reasons must be fully explained to those under instruction to prevent false lessons being learnt.
- (h) Some of the exercises should begin with the guns on their vehicles at a rendezvous, so that the fire unit can be practised in the procedure for coming into and out of action.
- (j) It is suggested that as many as possible of the following should be exercised as fire controllers:—
 - (i) *Direct fire.* Five per section, ie, section commander, commander, Nos. 1 and two others (preferably to include the range takers).
 - (ii) *Indirect fire.* Two per platoon, ie, platoon commander and platoon sergeant.

Procedure**6. Before the day of firing**

- (a) The platoon commander carries out a reconnaissance, and selects firing areas to be used by the platoon for direct and indirect fire.
- (b) The platoon commander decides on the targets to be engaged by each fire controller and the stage from which each exercise will begin. Targets should be selected mainly in areas which are likely to give observation of strike, and should vary in shape and range to bring out the various methods of fire. Each exercise will be designed to bring out a definite lesson.

- (c) Two cards will be prepared for each firing area, one for use by officer conducting the exercises and the other for the fire controller, when it is desired that he shall begin the exercise with a range card already prepared.

7. On the day of firing

(a) Direct fire

- (i) The platoon commander describes the arc of fire, safety arrangements, etc. All personnel to be exercised as fire controllers then assemble under the platoon commander and the remainder of the platoon under the platoon sergeant.
- (ii) As far as possible the personnel of each section should be exercised together. Each fire controller should work with his own rangetaker, though all rangetakers of the platoon should be exercised in observation of fire.
- (iii) The platoon commander indicates by means of a director the target to be engaged and when the fire order has been worked out he selects the fire controller to be exercised. The fire controller then engages the target, his actions and orders being watched and heard by the other fire controllers. At the conclusion of the exercise the platoon commander discusses and comments on the action and orders of the fire controller. It may sometimes be advisable to stop the exercise temporarily to discuss certain points.
- (iv) At the same time the platoon sergeant details the necessary gun numbers, who are frequently and systematically changed to ensure that they are all exercised. Throughout the exercise he takes charge of the spare gun numbers with whom he discusses, and comments on, the action of those actually manning the guns.

(b) Indirect fire

- (i) The procedure for exercising the platoon in indirect fire is the same as for direct fire as detailed in (a).
- (ii) All rangetakers not actually being exercised assemble under a qualified instructor and practise observation of fire.

PART IV

Aims

8. The aims of part IV are as follows:—

- (a) To practise the carrying out of tactical machine gun roles using ammunition.
- (b) To provide platoon commanders with a means of testing the standard of field duties, fire control, fire discipline and drill reached by their platoons.

9. Part IV is the final stage of platoon training. The number of exercises which can be usefully carried out is limited only by the amount of ammunition available or by the time for which a field firing range can be allotted.

10. The phases of the battle which may be practised include the following:—

- (a) Attack—covering fire, consolidation and flank protection.
- (b) Defence.
- (c) Withdrawal.
- (d) Any special form of warfare for which the unit is training, eg:—
 - (i) Mountain warfare.
 - (ii) Desert warfare.
 - (iii) Static warfare (harassing and counter-preparation tasks).

All exercises should be directed by the platoon commander.

11. *Framing the exercises.* An early reconnaissance of the area allotted should be carried out by the platoon commander. Each exercise will be based on a simple tactical situation.

12. The practical work of all schemes should open with the issue of the machine gun platoon commander's orders at the place at which they would be given out in war. Range safety precautions and the safety of other sections taking part must always be borne in mind. The scheme should be so framed that the restrictions on the choice of tactical positions, imposed by these considerations, are reduced to a minimum.

13. If facilities exist it is most desirable that all sections in defence should dig in and be concealed, a detailed inspection of the position made, and shooting carried out on targets within the arc and on fixed lines.

14. Although the officer framing the exercise cannot normally order the occupation of direct or indirect positions, situations can be created which will influence the platoon commander to adopt whichever is desired.

15. *Conduct of the exercise.* Before exercises begin, the opening narrative should be explained to all ranks taking part. Any assumed locations and movements of enemy and our own troops should be explained throughout the exercise. For purposes of co-operation, it may be desirable to represent headquarters of our own troops.

16. Special attention will be paid to the following subjects:—

- (a) Reconnaissance and issue of orders by platoon and section commanders.
- (b) Fire direction, fire control and fire discipline.
- (c) Section and platoon drill.
- (d) Care and concealment of guns, personnel, stores and vehicles during all phases.
- (e) Ammunition supply.
- (f) Tactical handling, driving and camouflage of vehicles.

17. Where range facilities exist, it may be possible for a platoon commander to exercise all the sections of his platoon within a complete machine gun platoon plan.

These exercises must be timed and arranged to ensure:—

- (a) the safety of all sections taking part;
- (b) that the platoon commander or an assistant director is present with each section during its reconnaissance, occupation and engagement of targets.

18. It may be found valuable for a number of exercises to be rehearsed before the sections carry them out with ammunition. When range facilities allow a variety of different exercises to be staged, sections should act as spectators during any exercise which they themselves are not to carry out.

19. To produce conditions resembling as far as possible those of active service, problems dealing with or caused by the following should be introduced occasionally:—

Casualties; protection from gas; the safety of our own troops; firing from camouflaged covering; ammunition supply and administration.

20. Indirect fire and night shooting necessitating reconnaissance by day should be practised. In such case the reconnaissance, as well as the shooting must be carried out under active service conditions.

21. Among the targets selected for engagement should be screens camouflaged or hidden behind natural objects such as bushes so that the amount of fire effect may be discovered.

22. *Supervision of the exercises.* One officer or NCO will be detailed to watch the action of, and hear the orders issued by, the platoon and each section commander taking part in the exercise.

23. One NCO will be detailed to watch the actions of the personnel of each section, other than the commander.

24. These officers and NCOs will also be responsible to the officer superintending for safety precautions but, apart from ensuring that these are observed, they will not interfere with the actions of the commanders or sections whom they are watching.

25. If possible, officers, warrant officers and NCOs detailed for supervision should be taken over the ground by the directing officer the day before the scheme takes place, so that they may be fully conversant with the probable actions of the commanders taking part.

26. At the conclusion of each exercise the directing officer should hold a short conference on the ground. All commanders, superintending officers and NCOs should be present. All points which require reference to the ground should then be discussed.

APPENDIX C

MOBAT

BATTALION ANTI-TANK GUN (120-mm) RANGE COURSE

REGULAR ARMY

General

1. It is NOT possible to devise a range course that will be acceptable to all units in all circumstances.

Amdt 4/Mar/1961

The range course suggested below may easily be adapted for use with the 120-mm BAT or the 17-pounder anti-tank guns.

suggested practices, which can be varied by him according to:—

- (a) State of training of the detachment.
- (b) Type and availability of range.
- (c) Ammunition and time at his disposal.

Principles

3. *Sub-calibre practice.* Before firing 120-mm on the range the maximum practice must be obtained using sub-calibre attachments on the open range.

4. "Change round" drill

- (a) All members of the anti-tank detachment must be practised in each others duties. The Nos. 1, 2 and 3 need NOT however be practised in the duties of detachment commander (though obviously this is desirable).
- (b) "Change round" drill, (~~omitting detachment commander~~) should be included in practice 1 (confidence round) and could be included to a limited extent (ie, Nos. 2 and 3 only changing) in practice 2 (zeroing). If ammunition is available "Change round" drill (omitting detachment commander) could be included in practices 4 and 5.

5. *Guns fully manned.* During every practice the gun(s) must be fully manned ~~and commanded by the detachment commander~~.

6. *All guns to be used.* Each detachment should zero (when necessary) and fire its own gun on all the practices except practice No. 1 (confidence round).

Notes on practices

7. Practice 1 (confidence round)

- (a) The aim of the confidence round is for each anti tank gunner, who has NOT fired the gun before, to gain confidence in the weapon and in his ability to lay and fire it accurately.
- (b) During this practice he can, by "changing round", get the feel of the firing of the gun at the other positions at the gun.
- (c) The gun or guns used on this practice must be zeroed beforehand.
- (d) After practice 1, detachments should use their own guns for the succeeding practices.

8. Practice 2 (zeroing). It may NOT be necessary to zero some or all of the guns and some ammunition may therefore be saved on this practice. This practice should never be combined with practice 1.

9. Practice 3. This practice is a logical preliminary to practice 4 but may be omitted depending on the state of training of the ~~N~~ 1. D G's

10. Practice 4. If ammunition and time is available the Nos. 2 and 3 of each detachment could also be practised in laying and firing at moving targets. Extra ammunition may be allocated from the pool for this purpose. Amdt 4/Mar/1961

11. Practices 3 and 4. To prevent waste of ammunition through inefficient fire control, the officer in charge of the practice will ensure that the correct range and lead are set on the telescope, and that the sub-calibre is hitting in the correct place on the target (when firing at targets above 500 yards range), before the main armament is fired.

Page 98. Insert new para 12:—

Amdt 4/Mar/1961

12. In order to spread the Range Course over a period of time (eg, during a cadre, etc), the five practices should not be fired on one day. A suitable grouping of practices by days would be:—

- (a) Practices 1 and 2.
- (b) Practices 3 and 4.
- (c) Practice 5.

ND
APPENDIX C continued
BATTALION ANTI-TANK GUN — REGULAR ARMY
(120 mm MOBAT) Range Course

amdt 4/Mar/1961

Practice	Purpose	Range (Yards)	Type of Target	No. of rounds per gun	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1	Confidence round	500-900	Tank hull or silhouette target	3	1 round for each member of the detachment who has NOT fired the gun before. Guns to be zeroed beforehand and fully manned during firing.
2	Zeroing	800	Zeroing screen	5	Normal zeroing procedure. Guns to be fully manned by their own detachments.
3	Laying practice stationary targets	300-900	Stationary silhouette targets	3	The DC will fire 3 rounds at different types of stationary targets ("Head on", "Hull down", etc). 1 of these rounds to be fired at a target below 500 yards. Guns to be fully manned by their own detachments. See "Notes on practices" page 98 para 11.
4	Laying practice moving targets	500-900	Direct crossing targets at two speeds (5-10 mph and 10-15 mph)	3	The DC will fire 3 rounds at crossing targets which will move at two speeds. Guns to be fully manned by their own detachments. See "Notes on practices" page 98 para 11.
5	Battle practice	500-900	Stationary silhouette targets. Direct crossing targets at 5-10 mph and diagonal crossers at 10-15 mph	5	The officer IC practice will indicate to the DC which targets to engage. The DC will then engage these targets with 5 rounds switching to a fresh target when target has been hit.
6	Pool			15	This is a pool to allow:— (a) Additional ammunition for all practices; (b) night firing (c) the Range Course to be repeated at a later date
			TOTAL	34	

APPENDIX D

SUB-MACHINE GUN COURSE—REGULAR ARMY

25 Yards Range Course

1. To be fired by all recruits at infantry depots and similar recruit training establishments.
2. To be used as a classification course by those arms who classify with the SMG.

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Sighting	1 No. 11 with an inscribed 6" wide strip up the middle of the target. A white patch to be on the centre of the target.	25	5	1 Standing. To be fired from the shoulder 2 Safety catch or stud at "R"	Nil	1 To be considered as a sighting shoot. 2 No time limit. 3 Targets to be examined by the firer.
2	Quick shooting	1 No. 11A target with an inscribed 2" wide strip up the middle of the target	25 (representing 75 yds)	10	1 Fire from the standing position for the first two exposures 2 For the next three exposures remain standing until the target appears then adopt the kneeling position and fire, returning to the standing position between exposures 3 To be fired from the shoulder 4 Start from the ready position and return there after each exposure 5 Safety catch or stud at "R" 6 Two shots to be fired at each exposure	1 point a hit. Hits in the cutting strip to be recorded	1 5 exposures of 3 seconds to be given over a period of 75 seconds. 2 Intervals between exposures to be not less than 5 seconds. 3 The last exposure to be at the end of the time limit.

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No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	Fire with movement	1 Fig 11A as for Practice 2 at 25 yards. 1 fig 11B with inscribed 3" wide strip up the middle of the target at 20 yards. 1 fig 11C with an inscribed 4½" wide strip up the middle of the target at 15 and 10 yards	25-10 (representing 75-25 yards)	10	1 Start at the ready position at 30 yards, the gun to be carried in this position throughout 2 Kneeling at 25 yards and 20 yards, standing at 15 and 10 yards 3 2 shots to be fired at each exposure 4 Safety catch or stud to be at "R" 5 To be fired from the shoulder	As for practice 2	1 2 exposures of 3 seconds each exposure with an interval of 4 seconds between exposures of the fig 11A at 25 yards. 2 1 exposure of 3 seconds of one fig 11B target at 20 yards. 3 One exposure of three seconds of the fig 11C at 15 and 10 yards. NOTE: Strict supervision is necessary to ensure that:— (a) Firers keep in line as they advance. (b) That guns are kept pointed at the butts.
4	Quick shooting	3 figs 11C targets inscribed as for practice 3 spaced one target's width apart	25 (representing 35 yards)	6	1 Fire from the standing position for the first exposure 2 Second exposure remain standing until target appears, then adopt the kneeling position and fire 3 Three shots to be fired (one at each target) at each exposure 4 Start at the ready position for each exposure 5 Safety catch or stud to be at "R" 6 To be fired from the shoulder	As for practice 2	2 exposures of 4 seconds each with an interval of 4 seconds between exposures.

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Total rounds 31 × 2 = 62

HPS 26

APPENDIX D **SUB-MACHINE GUN COURSES—REGULAR ARMY**

25 Yards Range Course

1. To be fired by all recruits at infantry depots and similar recruit training establishments.

2. To be used as a classification course by those arms who classify with the SMG.

Recruit's Qualification = 14 hits, 6 of which must be in the middle strip*

Trained soldiers who fire the course as classification:—

Marksman	— 22 hits of which 8 must be in the middle strip, otherwise the classification will be 1st class.*
1st class	— 18 hits
2nd class	— 14 hits
3rd class	— Below 14 hits.

NOTES

- The course will be fired twice, first as instructional and then as qualification or classification.
- Coaching is allowed for recruits.
- All targets will be fitted to a frame which will permit them, before exposure, to be edge-on to the firer. The rope which operates the targets should, whenever possible, be concealed from the firer. It has been found that rubber bands made from unserviceable inner tubes make very good springs for use with this apparatus.
- Fig 11A, B and C targets are scaled down versions of the fig 11 targets to represent the fig 11 at the following ranges:—
Fig 11A to represent fig 11 at 75 yards when firing from 25 yards.
Fig 11B to represent fig 11 at 50 yards when firing from 25 yards.
Fig 11C to represent fig 11 at 35 yards when firing from 25 yards.
- The overall size of these targets are:—

Target	Height	Width	Middle strip	
Fig 11A	15 inches	6 inches	2 inches	} To be measured from the centre line of the target.
Fig 11B	22½ inches	9 inches	3 inches	
Fig 11C	32 inches	13 inches	4½ inches	

6. Pending an official issue these scaled down targets can be made locally from existing figure targets. The exact reproduction of the facings is not considered to be of great importance.

*For Arms and Services armed with Marks 1 and 2, delete all reference to hits in the middle strip.

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APPENDIX D—continued **SUB-MACHINE GUN COURSES—REGULAR ARMY** **Advanced Course**

- This course is designed to be fired on either a classification or a field firing range.
- If fired on a field firing range, use should be made of the pull-up apparatus which is supplied for each range.
- It should be fired at least once yearly by all trained soldiers of the Infantry.

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Application	1 fig 11	75	5	1 Standing. To be fired from the shoulder 2 Safety catch or stud at "R."	Nil	1 To be considered as a sighting shoot. 2 No time limit. 3 Position of shots to be pointed out as they arrive, or spotted by use of binoculars on a field firing range.
2	Quick shooting at long range	1 fig 11	75	6	1 Fire from the standing position for the first exposure 2 For the next 2 exposures remain standing until the target appears then adopt the kneeling position and fire, returning to the standing position between exposures 3 Two rounds to be fired at each exposure 4 To be in ready position before each exposure of the target. Safety catch or stud at "R." 5 To be fired from the shoulder	1 point per hit	1 Five seconds after a signal from the 100 yards firing point give the first of three 4-second exposures with an interval of 10 seconds between them. 2 Targets to be exposed in a different position over two-target frontage on a classification range, or over as wide a frontage as possible on a field firing range. 3 Exposure of targets to be implemented by signal.
						HPS 6	

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APPENDIX D—continued
SUB-MACHINE GUN COURSES—REGULAR ARMY
 Advanced Course

1. This course is designed to be fired on either a classification or a field firing range.
2. If fired on a field firing range, use should be made of the pull-up target apparatus which is supplied for each range.
3. It should be fired at least once yearly by all trained soldiers of the infantry.

No.	Practice	Target	Range in yds	Rounds	Position and firer's instructions	Scoring	Range instructions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	Fire with movement	2 figs 11 for first exposure, 2 figs 13 for second exposure, 2 figs 12 for third exposure spaced about two targets width apart	100 to 25 yards	12	<ol style="list-style-type: none"> 1 Start at 100 yards, SMG at the ready position with safety catch or stud at "R". 2 Fire 4 rounds, 2 at each target at each exposure from the shoulder 3 Kneeling position for the first exposure, standing for the other two 4 Advance at the walk on the command, "Advance". Stop and fire when targets are exposed, then continue to advance without further orders, with SMG at the ready 	1 point per hit	<ol style="list-style-type: none"> 1 Targets to be exposed when the firers are at 75 yards, 50 yards and 25 yards. 2 Control of targets can be effected by:— (a) A signal from the firing point to butts just before the firers reach the prescribed distance or, (b) The butts to expose the targets at about 20-second intervals after an initial signal has been given, when the firers begin the advance. 3 To prevent the firer hearing commands given in the butts, all target exposures should be controlled by signal. 4 On classification ranges the targets, never less than two target widths apart, should be exposed at different points over a

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4	Moving target	1 fig 11	50	8	<ol style="list-style-type: none"> 1 Ready position, safety catch at "R". 2 Fire four rounds at each exposure of the target from the shoulder 3 Return to ready position when target disappears 	1 point per hit	<ol style="list-style-type: none"> 1 Targets to be exposed moving, ie, the marker starts to walk and then exposes the target at a quick walking pace over a distance of 7 yards, in 5 seconds, ie, about the distance between two target frames on a classification range. Target will be lowered at the end of the run. 2 The firer should not know in which direction the target is likely to move. 3 10 seconds between exposures. 4 To effect realism on a field firing range the targets should be mounted on light sledges and pulled to and fro across the firers' front by markers concealed in pits or from behind the firing point. The targets should be made to appear and disappear behind screens or clumps of bushes.
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two-target frontage. On field firing ranges they should be as widely spaced as possible.

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Total rounds $31 \times 2 = 62$

HPS 26

Qualification score — 13 hits
 To be fired twice, first as practice, then as qualification.

APPENDIX D—*continued* SUB-MACHINE GUN COURSES—
REGULAR ARMY

Total SAA Requirements

1. Basic course:—

Instructional	...	...	...	...	...	...	31
Classification	...	...	...	...	...	...	31
Total							62

2. Advanced course:—

Practice	...	...	...	...	...	...	31
Qualification	...	...	...	...	...	...	31
Total							62

APPENDIX E

MEDIUM MORTAR FIRING (3-INCH MORTAR)

Ammunition allotment (Infantry)

1. 10 rounds HE a year for mortar personnel.
105 rounds HE a month as unit pool.
10 rounds smoke a year for mortar personnel.
15 rounds smoke each mortar as unit pool.

In addition 100 per cent reserves may be trained who will be allotted four rounds HE and four rounds smoke each.

General

2. The firing of 3-inch mortar practices differs from the range practices of other weapons in an infantry battalion in that it cannot be regarded as a range classification course, nor is it a test for individual members of the mortar platoon. It is designed to practice the fire controllers and their understudies in the engagement of targets with high explosive and in the method of producing a smoke screen, also to exercise all ranks in battle procedure and in the handling of live ammunition. The practices are divided into three parts as detailed in paras 3, 4 and 5.

Part 1

3. This is sub-divided into two parts, one with the OP on the line mortar target, the other with the OP displaced to a flank.

- (a) *Aim.* The engagement of targets by the section, to exercise (potential) fire controllers and their understudies in the rules of ranging and mortar numbers in the handling of live ammunition.
- (b) *General.* In all shoots the mortars will be brought into action on a zero line. Control from the OP to the mortar position will be by telephone or wireless. It is a non-tactical shoot and all targets can be in view from the baseplate position.
- (c) *Conduct.* The fire controllers to be exercised should be assembled near the OP under the instructor, in a position from which they can hear the fire control orders and observe the fire.

On completion of the shoot, the instructor will discuss the fire control orders given, and the NCO instructor in charge at the mortar position will comment on the drill and fire discipline.

It is suggested that at least eight bombs per mortar be allotted to each fire controller.

Part 2

4. (a) *Aim.* The neutralization of targets with high explosive or the screening of areas with smoke, after bringing the detachment or section into action under service conditions.
- (b) *General.* A part 2 shoot is on the 3-inch mortar section and infantry company level. Shoots will normally be controlled by the section commanders, who should be exercised both as static and mobile fire controllers.
- (c) *Conduct.* The tactical situation will be given to the section commander by an officer representing his immediate commander. On the conclusion of each exercise, the instructor will comment on:—
- (i) Reconnaissance and occupation.
 - (ii) The laying of lines of fire.
 - (iii) The engagement of the target.
 - (iv) RT procedure.

A senior NCO will watch the work at each mortar and will comment on the drill and fire discipline at the end of the shoot. Safety problems should be introduced in these exercises.

Part 3

5. (a) *Aim.* As for part 2, but exercising the whole platoon and introducing the engagement of targets by fire units of more than one section.

Amdt 4/Mar/1961 Shoots will normally be controlled by section com-

- (b) *General.* Shoots will normally be controlled by the platoon commander, although section commanders may be practised in controlling the fire of the platoon under the supervision of the platoon commander. Section commanders may also be practised as MFCs.

- (c) *Conduct.* The tactical situation will be given to the platoon commander and the fire unit commanders by officers representing their immediate commanders. Casualties, gas, administration in the field and safety problems should be introduced during these exercises.

Parts 2 and 3 should exercise each fire controller in the use of both HE and smoke, and particular attention will be paid to the engagement of opportunity close support targets.

Safety precautions

6. Disposal of blinds (see chapter 8).

APPENDIX F**LIGHT MORTAR FIRING (2-INCH MORTAR)****Ammunition allotment**

1. (a) The ammunition allotment for infantry is as follows:—
Smoke—ten rounds each two mortar personnel a year—unit pool of 15 rounds each mortar.
Illuminating—one round each mortar personnel a year—unit pool of 15 rounds each mortar.
- (b) In addition 200 per cent reserves may be trained who will be allotted four rounds smoke each.
- (c) The scales for other arms and services vary slightly from the above and are published in the annual allotment of Common User ammunition.

Personnel to be exercised

2. In addition to the mortar detachment, at least 200 per cent reserves should be exercised.

General

3. Practice in firing with live ammunition must be carried out in as realistic a manner as possible. The mortar detachment should be exercised in working together, and all firing should, whenever possible, take place from behind natural cover, thereby necessitating the use of auxiliary aiming marks. The No. 2 must also be exercised in observing and correcting the fire of his No. 1.

Smoke

4. No range is necessary for firing smoke bombs and any suitable area may be used (see Infantry Training, Volume I, Pamphlet No. 8 The 2-inch Mortar, 1949, para 9 (WO Code No. 8452)).

Smoke bombs should be used in exercising mortar personnel and their reserves in laying a smoke screen (see Infantry Training, Volume I, Pamphlet No. 8, Lesson 5).

Firing from slit trenches

5. As opportunity offers, personnel should be exercised in firing the mortar from fire trenches.

Safety precautions

6. For disposal of blinds see Chapter 8.

APPENDIX G

ANNUAL FIRING

3·5-inch Rocket Launcher and Grenade Anti-Tank

No. 94 (Energa) Grenades

1. For both 3·5-inch rocket launcher and Energa grenades, firing should consist of the following:—

Each year, eight men each rocket launcher on unit establishment should fire at least four practice rockets and two live. All NCOs and men should fire four practice Energa grenades and two live. In addition all officers should fire the same number of rockets and grenades as the men.

2. Targets for practice rockets and grenades should be “*soft*”. The rockets and grenades should be fired so as to fall on grass, sand or soft earth.

3. Whenever possible both weapons should be fired at moving targets, using practice shot.

4. Records should be kept showing annual expenditure by each man, the distances used, and the number of hits obtained.

5. Where facilities exist, practice shot can be used against moving or stationary tanks, provided they are closed down.

6. Live firing must be carried out, using a tank hulk or other solid target.

7. Distances to be used:—

Energa practice shot, 75 and 50 yards.

Energa live, 75 yards.

3·5-inch rocket launcher practice rockets, 100 yards.

3·5-inch rocket launcher live, 100 yards.

No. 36 and No. 80 Grenades

1. All ranks of an infantry battalion should throw two live 36 and two 80 grenades each year.

2. Throwing the 36 grenade will take place on a live grenade throwing range, the target being a shell hole, and the range 25 yards.

3. The 80 grenade will be thrown from cover on ground which, in conjunction with a simple tactical situation, calls for an immediate local smoke screen.

4. Records should be made in each man's AB 142 of all grenades thrown.

RESTRICTED